



# INSTALLATION, OPERATION, AND SERVICE MANUAL



**DG-E**



## REVISION HISTORY

Revision	Date	Made by	Process	Details
A	7-15-15	KAP	N/A	Release to Production.
B	12-18-15	JH	N/A	Removed DG-D and all references to it. Changed P/N 05330-100-01-10 to 05330-011-61-34, item #3 on pg.32.
C	4-22-16	JH	N/A	Changed drain connection information on pg. 2 (changed 2" to 2 1/2" and "NPT" to "No Hub Connection.")
D	5-9-16	JH	ECN 8380	Changed Booster Tank Assembly view and applicable P/Ns to show thermostat change, pg. 32. Added schematic 09905-003-36-56-E to show thermostat change, pg. 37. Removed earlier versions. Changed Harness Connections diagram to show thermostat change, pg. 38.
E	1-9-17	JH	N/A	Updated to new manual format. Audited and corrected all P/Ns in the manual.
F	1-7-20	JH	8709	Corrected water line size to 1/2" on Operating Specs page. Removed unnecessary information from Electrical Requirements page and corrected motor HP. Updated Chemical Feeder Pump Components page. Changed complete motor assembly P/N on Motor page. Updated schematic to latest revision.
G	9-22-21	JH	8756	Replaced CAM timer with electronic cycle timer. Changed stand pipe P/N on Tub page.
H	12-13-21	JH	N/A	Updated water consumption per Energy Star 3.0 report.
J	5-10-22	JH	22-1197 22-1202	Updated Chemical Feeder Pumps section with black dot roller. Added in-line fuse for drain solenoid. Updated schematic.
K	12-14-22	JH	8896 8899 8901	Added timer bracket to control box section. Updated peri-pumps with black components. Corrected item numbers and added splash shields in Tub section. Revised discharge hose assembly in Frame & Motor section. New door assembly. Updated schematic.



## **DG-E**

**Glasswasher dishmachine; low-temperature, chemical-sanitizing, with a sustaining heater and detergent, rinse-aid, and sanitizer chemical feeder pumps.**

The manufacturer provides technical support for all of the dishmachines detailed in this manual. We strongly recommend that you refer to this manual before making a call to our technical support staff. Please have this manual open when you call so that our staff can refer you, if necessary, to the proper page. Technical support is not available on holidays.

Contact technical support toll free at 1-888-800-5672.

Technical support is available for service personnel only.

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## SYMBOLS



- Risk of Injury to Personnel



- Risk of Damage to Equipment



- Risk of Electrical Shock



- Caustic Chemicals



- Reference Data Plate



- Lockout Electrical Power

**NOTICE**

- Important Note



- Instructions Hyperlink

## ABBREVIATIONS & ACRONYMS

**ANSI** - American National Standards Institute

**GHT** - Garden Hose Thread

**GPG** - Grains per Gallon

**GPM** - Gallons per Minute

**HP** - Horse Power

**Hz** - Hertz

**ID** - Inside Diameter

**kW** - Kilowatts

**MCA** - Minimum Circuit Ampacity

**MOP** - Maximum Overcurrent Protection

**NFPA** - National Fire Protection Association

**NPT** - National Pipe Thread

**OD** - Outside Diameter

**PRV** - Pressure Regulating Valve

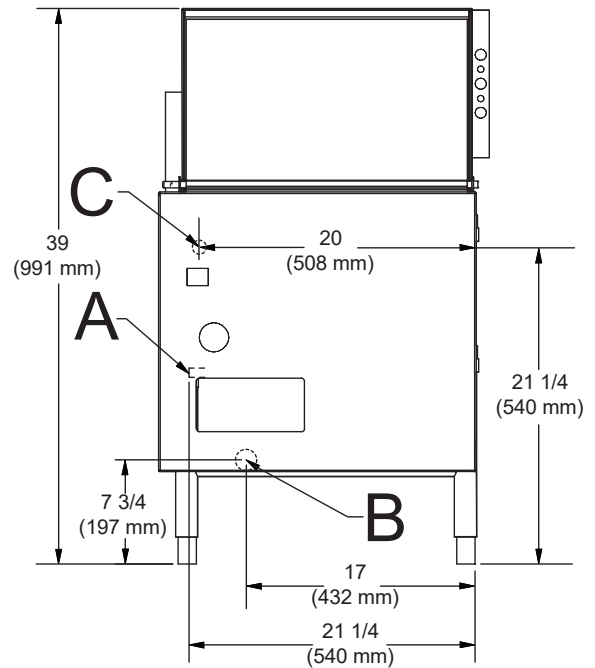
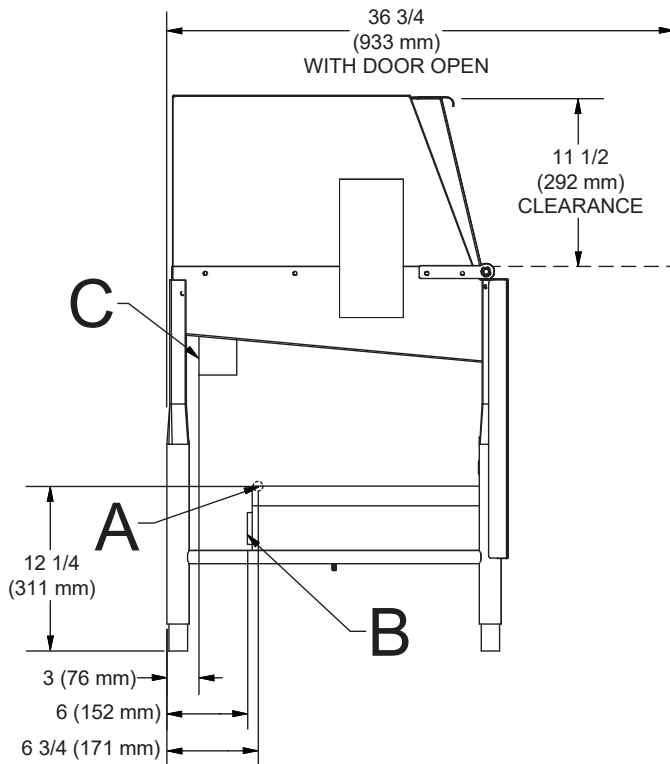
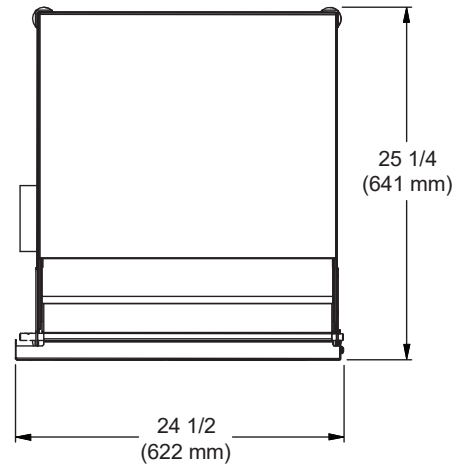
**PSI** - Pounds per Square Inch

**V** - Volts

## LEGEND

- A - Water Inlet (1/2" NPT)
- B - Drain Connection (2" NPT)
- C - Electrical Connection

All dimensions from the floor can be increased 2 3/4" using the machine's adjustable feet.



**OPERATING SPECS Operating Capacity:**

Racks per Hour (without load time)	39
Dishes per Hour	975
Glasses per Hour	1404
Gallons per Rack	1.15
Gallons per Hour	44.85

**Operating Cycles (Seconds):**

Wash Time	46
Rinse Time	25
Dwell Time	21
Total Cycle Time	92

**Wash Tank Capacity (Gallons):** 1.2

**Water Temperatures (°F):**

Minimum Wash Temperature	120
Minimum Rinse Temperature	120

*(140 °F is recommended for both.)*

**Other Water Requirements:**

Water Line Size (NPT)	1/2"
Drain Line Size (NPT)	2"
Flow Pressure (PSI)	20 ± 5

**Minumum Chlorine Required (PPM):** 50



*Always refer to the machine data plate for specific electrical and water requirements. The material provided on this page is for reference only and is subject to change without notice.*



**NOTICE**



**Electrical Requirements:**

Wash Motor HP	1
Sustaining Heater kW	2

All electrical ratings provided in this manual are for reference only. Always refer to the machine data plate to get exact electrical information for this machine. **All electrical work performed on machines should be done in accordance with applicable local, state, territorial, and national codes.** Work should only be performed by qualified electricians and authorized service agents.

*\*The DG-E is designed so the wash motor is never running when the sustaining heater is on. Total Load is based on the higher of the two loads.*

**DG-E  
Electrical Characteristics**

<b>VOLTS</b>	115
<b>PHASE</b>	1
<b>FREQ</b>	60
<b>WASH MOTOR AMPS</b>	10.0 A
<b>SUST. HEATER AMPS</b>	16.0 A
<b>TOTAL LOAD</b>	16.0 A*
<b>MCA</b>	18.5 A
<b>MOP</b>	25 A

**INSPECTION**

***Do not throw away packaging if damage is evident!***

Before installing the machine, check packaging and machine for damage. Damaged packaging might be an indication of damage to the machine. If there is any type of damage to both packaging and machine, do not throw away the packaging. The machine has been inspected at the factory before shipping and is expected to arrive in new, undamaged condition. However, rough handling by carriers or others might result in damage to the machine while in transit. If this occurs, do not return the machine to the manufacturer. Instead, contact the carrier and ask them to inspect the damage and complete an inspection report.

Contact the carrier within 48 hours of receiving the machine as well as the dealer that sold you the machine.

**UNPACKING**

The machine should be unpacked and removed from the pallet before installing. Open the front door and remove all materials from inside. Once unpacked, verify there are no missing parts. If a part is missing, contact the manufacturer immediately.

**LEVELING**

The machine is designed to operate while level. This is important to prevent any damage to the machine during operation and to ensure the best possible results. The machine comes equipped with adjustable bullet feet which can be turned using a pair of pliers. Verify the unit is level from front-to-back and side-to-side before making any electrical or plumbing connections.

**FACILITY HOT WATER HEATER**

The manufacturer does NOT endorse “Tankless On-demand” water heaters for use with their machines. The manufacturer DOES endorse, and highly recommends, the standard “Tank” style water heaters, sized to properly handle the water heating requirements of the facility.

**PLUMBING**

***CAUTION! The plumber must flush the incoming water line!***

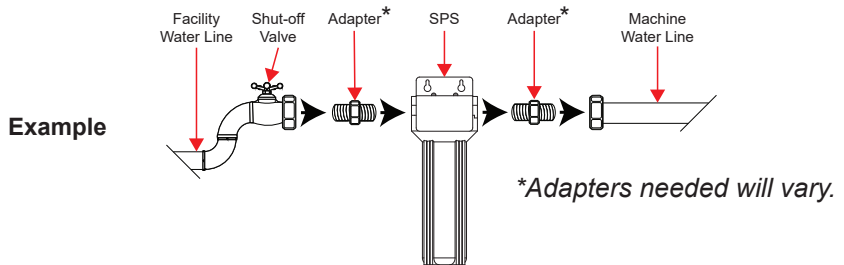
***A water hardness test must be performed.***

All plumbing connections must be made to adhere to local, state, territorial, and national codes. The installing plumber is responsible for ensuring the incoming water lines are flushed of debris before connecting to the machine. Note that chips and materials from cutting processes can become lodged in the solenoid valves and prevent them from opening or closing. Any valves that are found to be fouled or defective because of foreign matter left in the water line, and any subsequent damage, are not the responsibility of the manufacturer.

A water hardness test must be performed. If water hardness is higher than 3 GPG, install a water softener or install the optional Scale Prevention System (SPS). See next section and Plumbing Options page for more information on the SPS.

## WATER SUPPLY CONNECTIONS: WATER HARDNESS HIGHER THAN 3 GPG

If water hardness is higher than 3 GPG and a water softener is not being used, install the optional SPS into the water line between the facility water line and the machine water line (installed at the factory). See the Plumbing Options page for more information on the SPS. Observe proper inlet/outlet water directions. A water shut-off valve should be installed before installing the SPS to allow access for service.



## WATER SUPPLY CONNECTIONS: WATER HARDNESS LOWER THAN 3 GPG

If water hardness is lower than 3 GPG, install the water supply line (1/2" ID pipe size minimum) to the machine's incoming water connection point using copper pipe (or order the 1/2" ID flexible hose kit offered by manufacturer). A water shut-off valve should be installed before installing the SPS to allow access for service.

## PRESSURE REGULATOR

The manufacturer has an optional water pressure regulator (see Plumbing Options page) to accommodate areas where water pressure fluctuates or is higher than the recommended pressure. Take care not to confuse static pressure with flow pressure: static pressure is line pressure in a "no flow" condition (all valves and services are closed); flow pressure is the pressure in the fill line when the valve is opened during the cycle.

*Take care not to confuse static pressure with flow pressure.*

## SHOCK ABSORBER

It is suggested that the optional shock absorber (see Plumbing Options page) be installed on the incoming water line. This prevents water hammer (hydraulic shock) from causing damage to the equipment.

## DRAIN LINE

The machine drain requires a minimum 2" NPT piping that is pitched at least 1/4" per foot. There must also be an air-gap between the machine drain line and the floor sink or drain. If a grease trap is required by code, it should have a flow capacity of 5 GPM.

## PLUMBING CHECK

After installing the incoming fill line and drain line, slowly turn on the water supply to the machine. Check for any leaks and repair as required. All leaks must be repaired before operating the machine.

## ELECTRICAL POWER CONNECTIONS

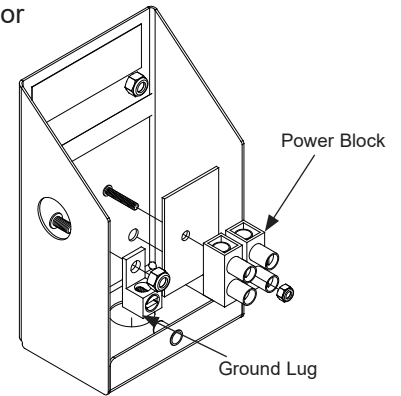


**Disconnect electrical power at the breaker or disconnect switch and tag-out in accordance with procedures and codes.**

Electrical and grounding conductors must comply with the applicable portions of the National Electric Code ANSI/NFPA 70 (latest edition) and/or other electrical codes.

The data plate is located behind the door of the machine. Refer to the data plate for machine operating requirements, machine voltage, total amperage, and serial number.

Remove the connection box lid to install the incoming power lines. Install 1/2" conduit into the pre-punched holes in the back of the control box. Route power wires and connect to power block and grounding lug. Install the service wires to the appropriate terminals as they are marked on the terminal block. Install the grounding wire into the lug provided. It is recommended that "DE-OX" or another similar anti-oxidation agent be used on all power connections.



## VOLTAGE CHECK



Apply power to the machine. Check the incoming power at the terminal block and ensure it corresponds with the voltage listed on the data plate. If not, contact a qualified service agency to examine the problem. Do not run machine if voltage is too high or too low. Shut off the service breaker and advise all proper personnel of the location of the breaker and any problems. Replace the connection box lid and tighten-down the screws.

## SURROUNDING AREA

This is a commercial machine and reaches temperatures that can exceed those generated by a residential machine. Therefore, any surrounding countertops, cabinets, flooring material, and subfloor material must be designed and/or selected with these higher temperatures in mind.

**NOTICE** *Any damage to surrounding area that is caused by heat and/or moisture to materials that are not recommended for higher temperatures will not be covered under warranty or by the manufacturer.*

## TEMPERATURE SETPOINTS

The temperature setpoints on this unit have been set at the factory. They should only be adjusted by an authorized service agent.

## CHEMICAL FEEDER EQUIPMENT

This equipment is not recommended for use with deionized water or other aggressive fluids. Use of deionized water or other aggressive fluids will result in corrosion and failure of materials/components and will void the manufacturer's warranty.



**CAUTION!** *Chlorine-based sanitizers can damage the machine if the chemical solution is too strong. Contact the chemical supplier for information.*

## PREPARING CHEMICAL FEEDER PUMPS

This machine is supplied with detergent, rinse-aid, and sanitizer chemical feeder pumps.

Locate the open ends of the chemical tubes with the tube stiffeners and place each one in the appropriate container.

- Red Tubing = Detergent
- Blue Tubing = Rinse-aid
- White Tubing = Sanitizer

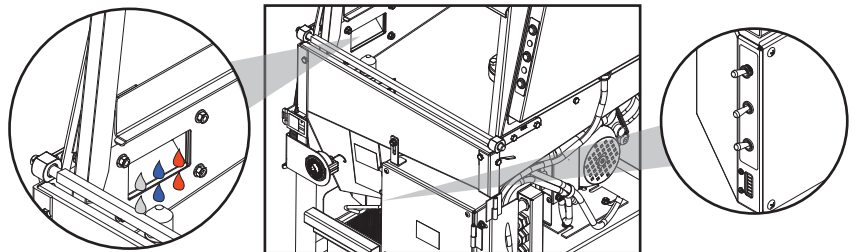
## PRIMING CHEMICAL FEEDER PUMPS

Chemical feeder pumps need priming when the machine is first installed or if the chemical lines have been removed and air was allowed to enter.



**CAUTION!** *Water must be in the sump and wash tank before dispensing chemicals.*

1. Verify proper chemical tube stiffener inlet is in proper container.
2. Use prime switches located on the panel inside the door to prime each pump. The switches are clearly marked with the type of chemical.
3. To prime pumps, hold the switch until the chemical can be observed entering the sump.



**WARNING!** *Some dishwashing chemicals might cause chemical burns. Wear protective gear when handling these chemicals. If any skin contact occurs, follow the instructions provided with the chemicals.*

4. Detergent is dispensed as required during the wash cycle by the timer. The amount of detergent might need to be adjusted depending on water quality and type of detergent.
5. Rinse-aid is dispensed as required into the final rinse. The amount of rinse-aid might need to be adjusted depending on water hardness and results.
6. Sanitizer is dispensed into the final rinse. The amount of sanitizer might need to be adjusted depending on the concentration.

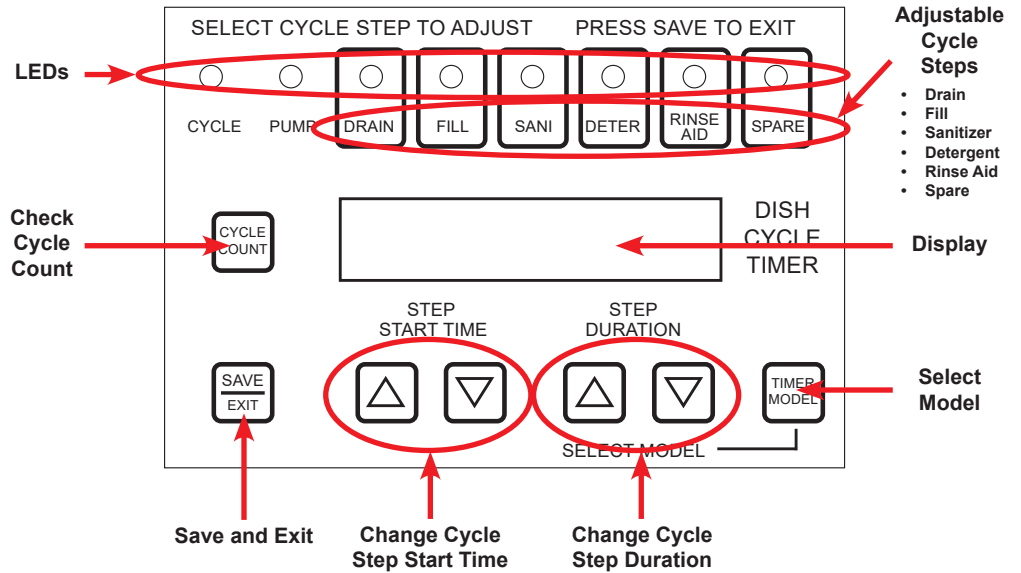
## OVERVIEW

### NOTICE

Machines with serial numbers before 21H396817 have the old CAM timer. See [previous manual](#).

The timer accepts user input and provides feedback on the status of the dishmachine.

Cycle steps are the different sub-cycles (fill, drain, etc.) of the total wash cycle.



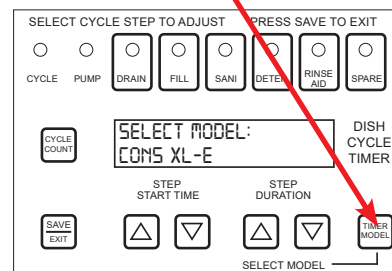
## POWERING ON

The display will read "JACKSON WWS" and the firmware version when powered on. This is the Default/Home screen.

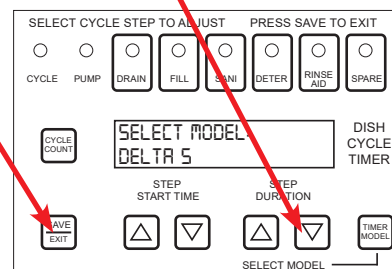
- If inactive for 15 seconds the blue backlight will turn off.
- If inactive for 30 seconds the display will turn off.
- Inactivity timer will reset if any button is pushed.
- Push any button while inactive and the display will turn on and show the Home screen.

## SELECTING MODEL

1. With the display on, press TIMER MODEL. Display will show "SELECT MODEL" and the currently-active model.



2. Select correct model using ARROW buttons under STEP DURATION.
3. Press SAVE/EXIT.



**Model DELTA 5**

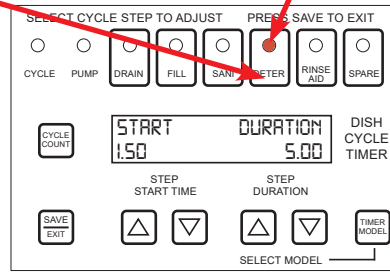
## CHANGING CYCLE STEP TIMES

*The first two steps (CYCLE and PUMP) are fixed and can't be adjusted. All other steps are adjustable.*

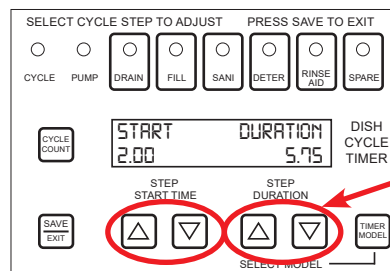
*Timing of the total wash cycle begins when START is pressed. Machine returns to IDLE after one full cycle.*

*Change is also saved if inactive for 10 seconds or any other button is pressed.*

1. Press button for step being changed. The LED for that step will come on.

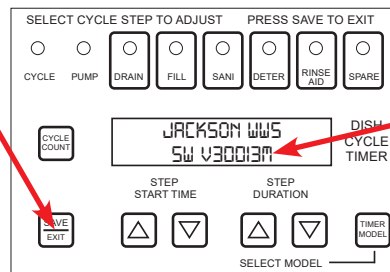


2. Change STEP START TIME or STEP DURATION using ARROW buttons (adjustments are made in 0.25-second increments).



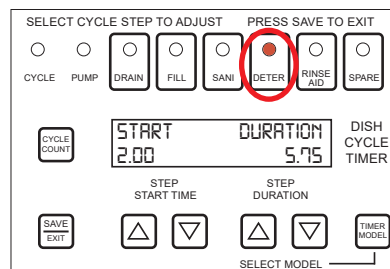
*Hold ARROW buttons for rapid change (slew).*

3. Press SAVE/EXIT to save the change and exit.



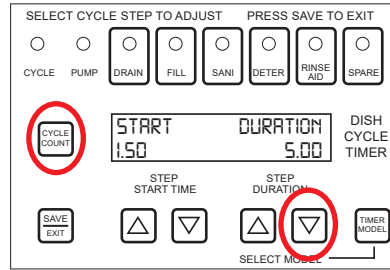
*"M" = Modified Timing  
"F" = Factory Defaults*

4. Repeat with other steps as needed.
5. To review current settings for a given step, press button for that step during IDLE. Its current STEP START TIME and STEP DURATION will be displayed.

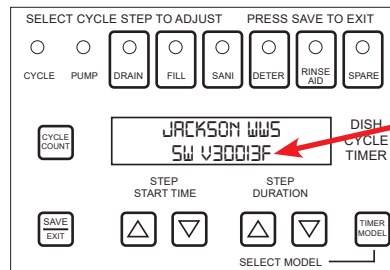


## RESETTING TO FACTORY DEFAULTS

1. Press and hold CYCLE COUNT button and DOWN ARROW button (under STEP DURATION) simultaneously for 3–4 seconds.



2. Resets all settings to factory defaults for the active model. Cycle count is unaffected by the reset.
3. Firmware version on the Home screen shows "F" at the end, indicating the timer is now set to factory defaults for the active model.

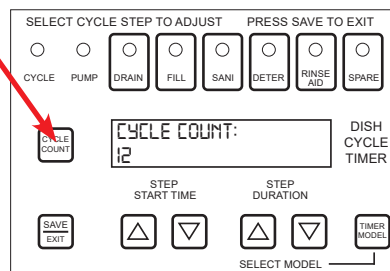


*Firmware version changes, so number will be different depending on when timer was installed.*

*"M" = Modified Timing  
"F" = Factory Defaults*

## CHECKING CYCLE COUNT

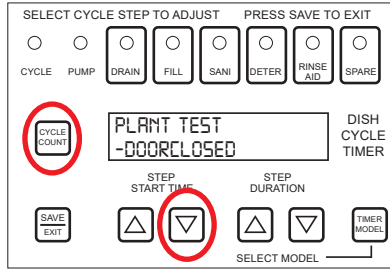
1. Press CYCLE COUNT button. Cycle count will show on display.



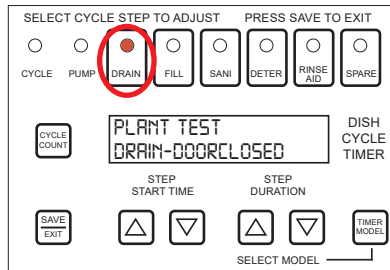


## PLANT TEST MODE

1. Press and hold CYCLE COUNT button and DOWN ARROW button (under STEP START TIME) simultaneously for 3–4 seconds.



2. Press and hold the DRAIN button. The DRAIN output stays on while the button is held. The output turns off when the button is released. Repeat for the other seven buttons (use SAVE/EXIT to activate CYCLE output, use CYCLE COUNT to activate PUMP output). Second row of display shows outputs and inputs that are active.



### Outputs

Cycle  
Wash  
Drain  
Fill  
Sani  
Deter  
Rinse  
Spare

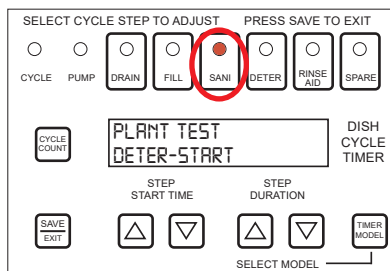
### Inputs

DoorClosed  
Start

*After 15 seconds of no button being pressed, the timer exits the plant test mode.*

*If more than one input is on, the first letters of each will show (e.g. "Drain-DH" indicates the DRAIN output and DoorClosed and Heavy inputs are on).*

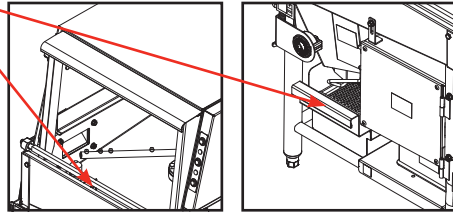
3. Plant test mode can also be used to prime chemicals if the machine has no priming function. Open door and press and hold the SANI button until sanitizer is seen entering the wash sump/tank and no air is in the line.



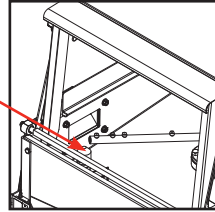
4. Repeat for DETER and RINSE AID buttons.

**PREPARATION** Before operating the machine, verify the following:

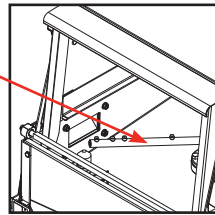
- Strainers are clean and in place.



- Drain stopper is installed.



- Wash/rinse arm is screwed securely into place and end-caps are tight.
- Wash/rinse arm rotates freely.



**POWER UP** To energize the machine, turn on power at the service breaker. The voltage should have been previously verified as correct. If not, the voltage must be verified before energizing the unit.

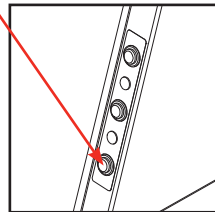
**INITIAL START-UP**

Before the heater element can be energized, the heater tank must be initially filled with water.

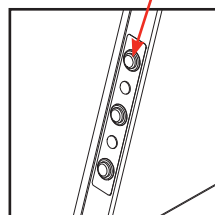
1. Press and hold FILL button until water overflows into the wash strainer, then release the button.



**CAUTION!** *Damage to the heater element will occur if the element is not submerged in water.*



2. The heater tank is now filled with water.
3. Turn off the machine by pressing the ON/OFF button.



**INITIAL  
START-UP**

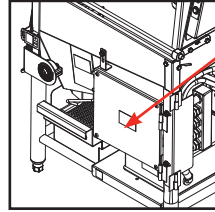
*Disconnect electrical power at the breaker or disconnect switch and tag-out in accordance with procedures and codes.*



**CAUTION!** *Water must be in the sump while the machine is running to avoid running the pump dry and causing damage to the pump seal.*

After filling the heater tank, the heater element must be enabled. The machine is shipped from the factory with the heater element disabled. This is done to ensure that the heater element is not damaged by energizing the element without the element being submerged in water. To enable the heater element:

1. Disconnect electrical power and remove the control box cover.



2. Connect the tagged white/blue wires.



3. Replace the control box cover and reconnect electrical power.
4. Press the ON/OFF button. The heater element will energize to sustain water temperature.

If the water level is not between the lines on the drain stopper, it will require adjustment. Check to ensure that the recommended water pressure is being supplied to the machine ( 20 ± 5 PSI). If the water pressure is correct, the timer needs adjustment. See Cycle Timer Instructions section.

The machine runs a complete cycle to drain and fill. If the machine fails to drain, the water will build-up inside the tub. After the initial fill, the rinse water for the current cycle will mix with the wash water for the next cycle.

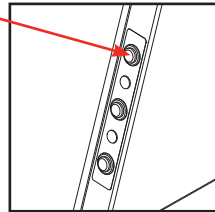
## WARE PREPARATION

Proper preparation of ware is essential for the smooth and efficient operation of the machine, resulting in fewer rewashes and less detergent used. Any ware loaded inside the machine should have all solid food waste and scraps removed. Ware should be sprayed-down before being placed in the machine.

Place cups and glasses upside-down in racks so they do not hold water during the cycle. Presoak flatware in warm water to assist in removal of stuck-on material. Load plates and saucers in the same direction.

## DAILY START-UP

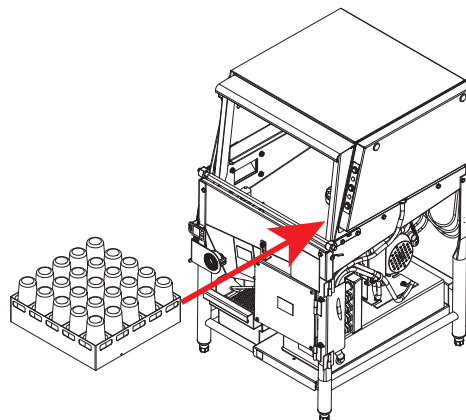
1. Ensure items in the Preparation section have been verified.
2. Verify chemical levels are correct.
3. Ensure power is on and the tub has filled to the correct level.
4. Push START button: the unit will start, run through the cycle, and shut off automatically.



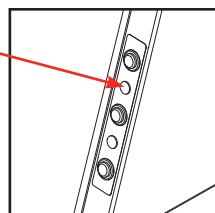
5. Repeat this two more times.
6. The machine is now ready for operation.

## WASHING A RACK OF WARE

1. Open door.
2. Place a rack of ware into the machine.



3. Press and hold START button until the cycle starts (about two seconds).
4. After cycle light goes off, the cycle is complete.



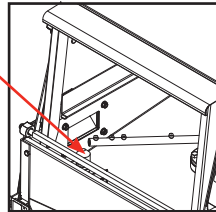
5. Open door and remove the rack.

## OPERATIONAL INSPECTION

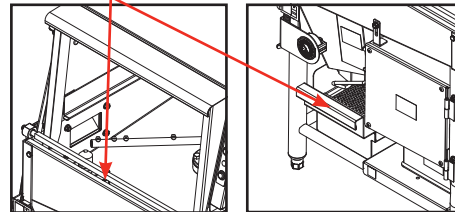
As the workday progresses, operators should regularly inspect the strainers to ensure they have not become clogged. If the strainers become clogged, it will reduce the washing capability of the machine.

## SHUTDOWN & CLEANING

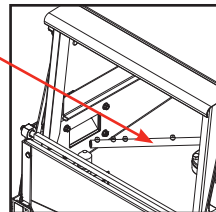
1. Turn machine off by pushing ON/OFF button.
2. Remove drain stopper and allow tub to drain.



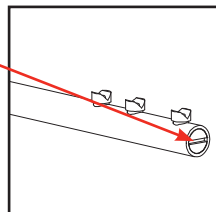
3. Remove and clean the strainers.



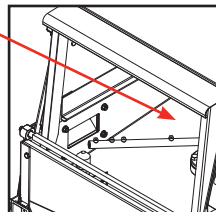
4. Unscrew wash/rinse arm from its manifold.



5. Verify nozzles and arm are free from obstruction. If clogged, remove end-caps, clean nozzles with a brush, and flush with fresh water.
6. Replace end-caps and tighten with screwdriver.



7. Spray or wipe out interior of machine.



8. Replace wash/rinse arm.
9. Ensure all strainers are clean and securely in place.
10. Replace drain stopper.
11. Use stainless steel polish to protect outside of machine.



**CAUTION!** Do NOT beat strainers to remove soil and debris!

**DETERGENT  
CONTROL**

Detergent usage and water hardness are two factors that greatly contribute to the machine's operating efficiency. Using the proper amount of detergent can become a source of substantial savings. A qualified water-treatment specialist can determine what is needed for maximum efficiency from the detergent.

- Hard water greatly affects the performance of the machine, causing the amount of detergent required for washing to increase. If the machine is installed in an area with hard water, the manufacturer recommends the installation of water treatment equipment.
- Deposited solids from hard water can cause spotting that will not be removed with a drying agent. Treated water will reduce this occurrence.
- Treated water might not be suitable for use in other areas of operation and it might be necessary to install a water treatment system for the water going to the machine only. Discuss this option with a qualified water treatment specialist.
- Properly train operators on how much detergent is to be used per cycle. Meet with a water treatment specialist and chemical supplier to discuss a complete training program for operators.
- Water temperature is an important factor in ensuring the machine functions properly, and the machine's data plate details what the minimum temperatures must be for the incoming water supply, the wash tank, and the rinse tank. If minimum requirements are not met, it's possible that dishes will not be clean or sanitized.
- Instruct operators to observe the required temperatures and to report when they fall below the minimum allowed. A loss of temperature can indicate a larger problem.

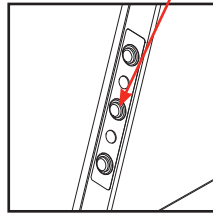


**DELIMING** To maintain the machine at its optimum performance level, lime and corrosion deposits must be removed. The frequency for deliming will be based on water conditions. A deliming solution is available from your chemical supplier. Read and follow all instructions on the label.

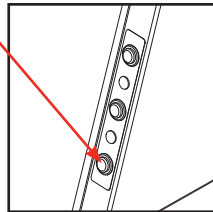
*If this machine is equipped with the SPS and lime is becoming a frequent problem, the cartridge needs to be replaced. See the Plumbing Options page to order a replacement.*

To delime the machine:

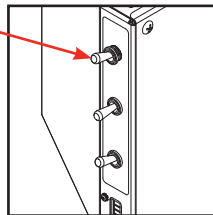
1. Turn the machine on by pressing the ON/OFF button.



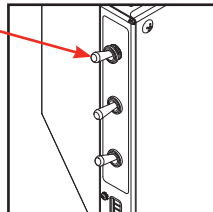
2. Press and hold the FILL button until water overflows into the wash strainer.



3. Add deliming solution per supplier's instructions.
4. Close door.
5. Flip NORMAL/DELIME switch to DELIME.



6. Run machine the period of time recommended by chemical supplier.
7. Wait five minutes, then inspect inside of the machine. If the machine is not delimed, run again.
8. Flip NORMAL/DELIME switch to NORMAL.



9. Run two cycles to remove residual deliming solution.

**PREVENTATIVE  
MAINTENANCE**

The manufacturer highly recommends that any maintenance and repairs not specifically discussed in this manual only be performed by qualified service personnel. Performing maintenance on the machine may void a warranty.

By following the operating and cleaning instructions in this manual, users should get the most efficient results from the machine. As a reminder, here are some steps to ensure that the machine is used properly:



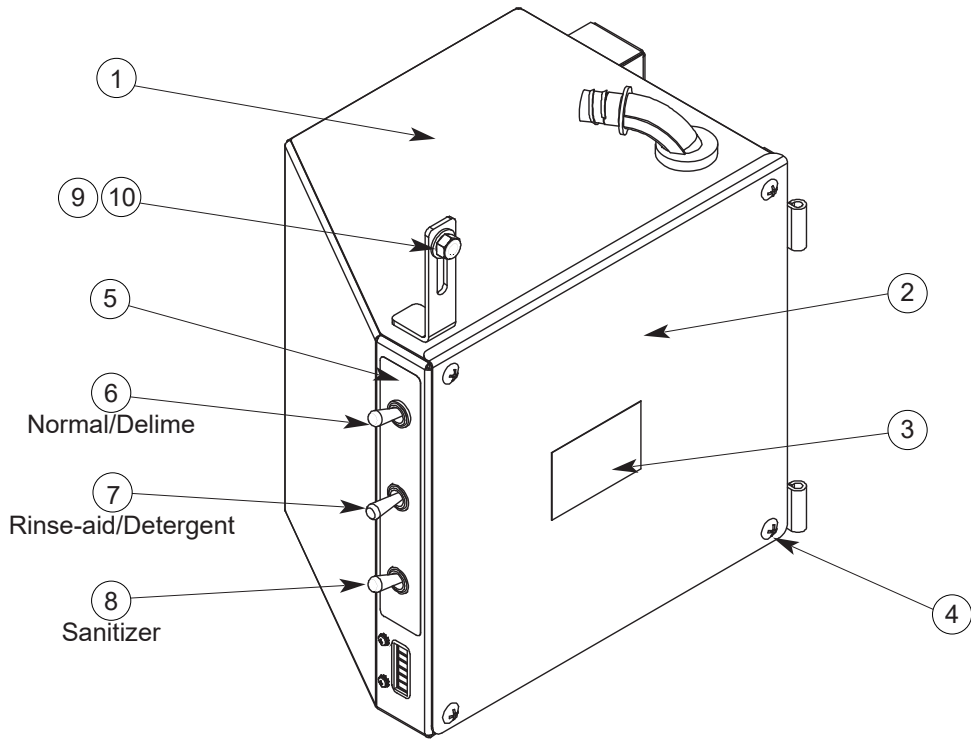
**CAUTION! Do NOT beat  
strainers to remove  
soil and debris!**

- Ensure water temperatures match those listed on the machine data plate (behind the door).
- Remove as much soil as possible from ware before loading into racks.
- Ensure all strainers are in place and free of soil and debris before operating the machine. To clean strainers, wipe them out with a rag and rinse under a faucet. A toothpick can be used to dislodge any stubborn debris. Do not beat strainers on waste cans; once bent they will not work properly.
- If hard water is present, install a water softener or SPS into the water line connecting to the machine (see Plumbing section).
- Ensure wash/rinse arm is secure in the machine before operating.
- Ensure the drain stopper is in place before operating.
- Do not overfill racks.
- Ensure glasses are placed upside-down in the rack.
- Ensure all chemicals being injected into the machine have been verified at the correct concentrations.
- Clean out the machine at the end of every workday per the Shutdown and Cleaning section.
- Follow all safety procedures, whether listed in this manual or put forth by local, state, or national codes/regulations.



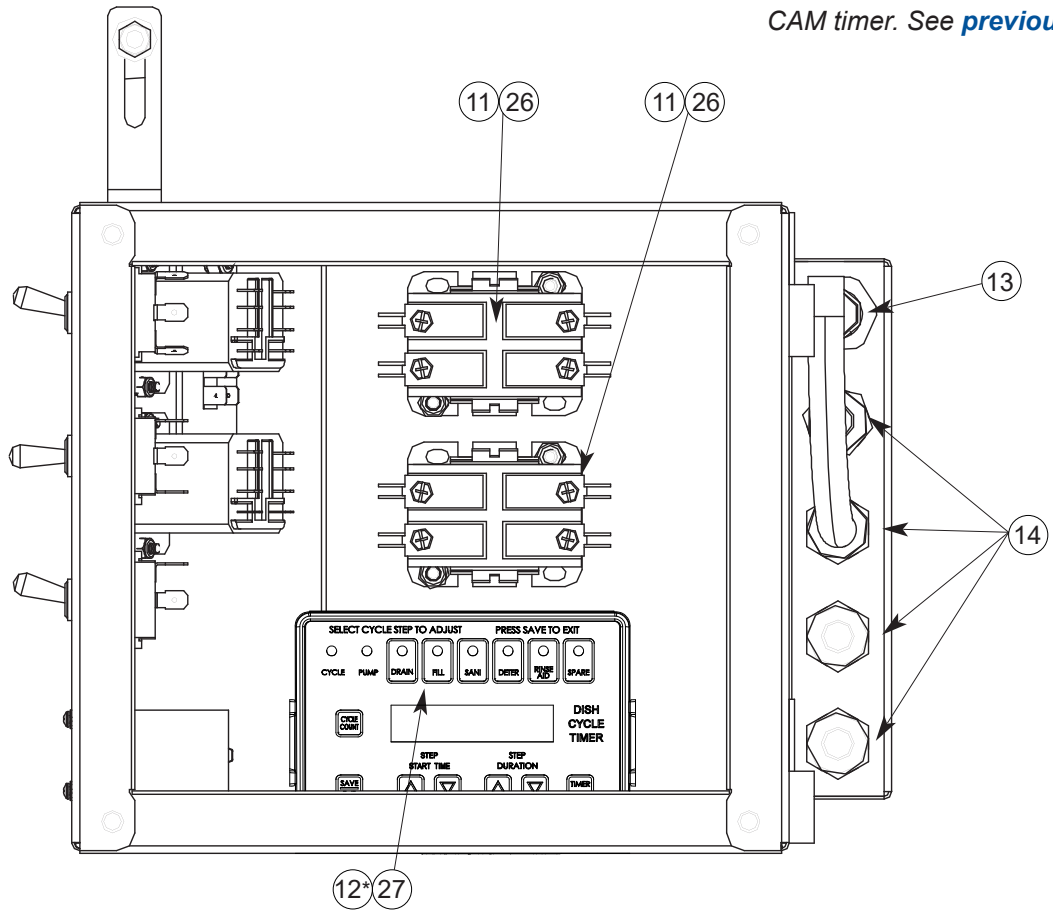
<b>PROBLEM</b>	<b>POSSIBLE CAUSE</b>	<b>REMEDY</b>
Water overflow from bottom of door.	<ol style="list-style-type: none"> <li>1. Clogged drain.</li> <li>2. Machine not level.</li> <li>3. Excessive inlet pressure.</li> <li>4. Detergent foaming.</li> <li>5. Wash/rinse arm end-cap missing.</li> <li>6. Excessive fill time.</li> </ol>	<ol style="list-style-type: none"> <li>1. Remove obstruction.</li> <li>2. Level machine or increase height to the front.</li> <li>3. Install pressure reducing valve or adjust if one is present. Ensure flow meets data plate specification.</li> <li>4. Reduce detergent quantity.</li> <li>5. Replace.</li> <li>6. Adjust timer fill time (see Initial Start-up section).</li> </ol>
Wash motor doesn't operate on delime wash.	<ol style="list-style-type: none"> <li>1. Loose or broken wires.</li> <li>2. Defective delime switch.</li> <li>3. Defective motor starting relay.</li> </ol>	<ol style="list-style-type: none"> <li>1. Reconnect or replace wires in motor.</li> <li>2. Verify delime switch triggers input on PLC. If not, check wiring/replace membrane.</li> <li>3. Replace.</li> </ol>
Motor operates on delime wash but not on automatic.	<ol style="list-style-type: none"> <li>1. Defective circuit in delime switch.</li> <li>2. Loose or broken wires.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace switch.</li> <li>2. Tighten and/or replace.</li> </ol>
No water comes through the arm when the "FILL" switch is depressed.	<ol style="list-style-type: none"> <li>1. Water not turned on.</li> <li>2. Defective solenoid valve.</li> </ol>	<ol style="list-style-type: none"> <li>1. Turn water on.</li> <li>2. Replace solenoid valve.</li> </ol>
Little or no water coming through the rinse assemblies.	<ol style="list-style-type: none"> <li>1. Limed-up rinse heads or piping.</li> <li>2. Low water pressure.</li> </ol>	<ol style="list-style-type: none"> <li>1. Delime rinse heads.</li> <li>2. Increase pipe size to machine. Adjust pressure regulator.</li> </ol>
Rinse water runs continuously with breaker turned off.	<ol style="list-style-type: none"> <li>1. Defective plunger in solenoid valve.</li> <li>2. Defective diaphragm in solenoid valve.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace.</li> <li>2. Replace diaphragm.</li> </ol>

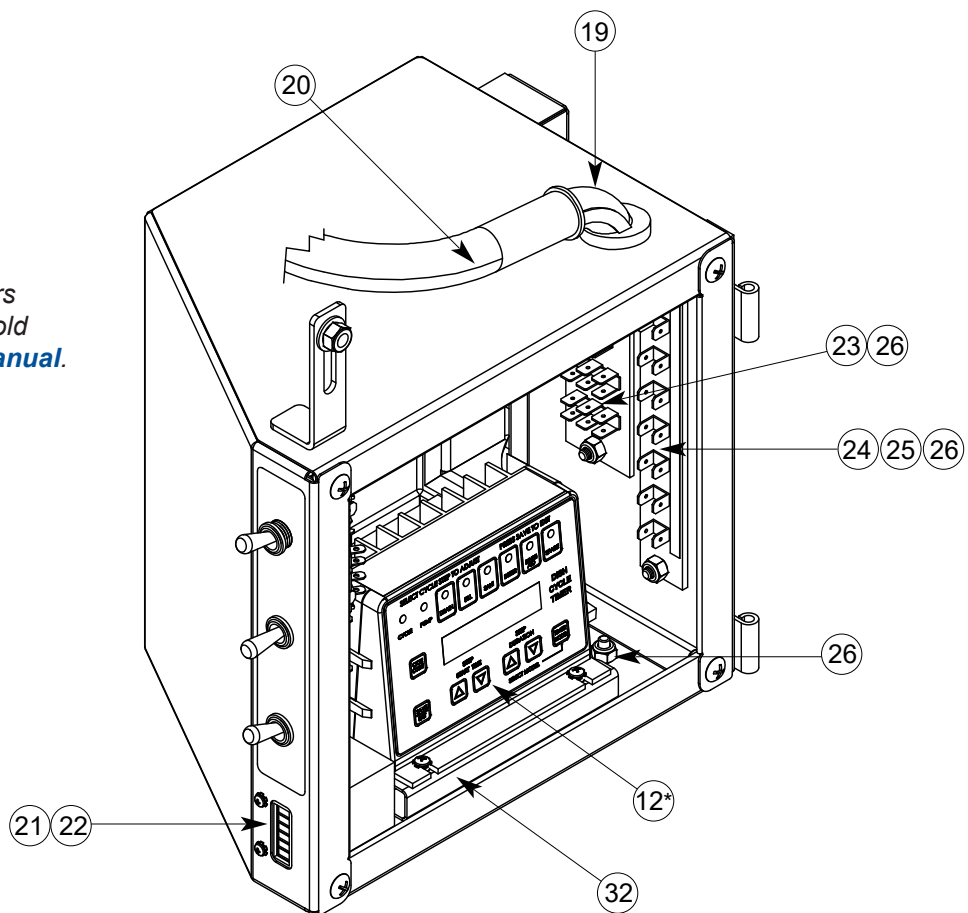
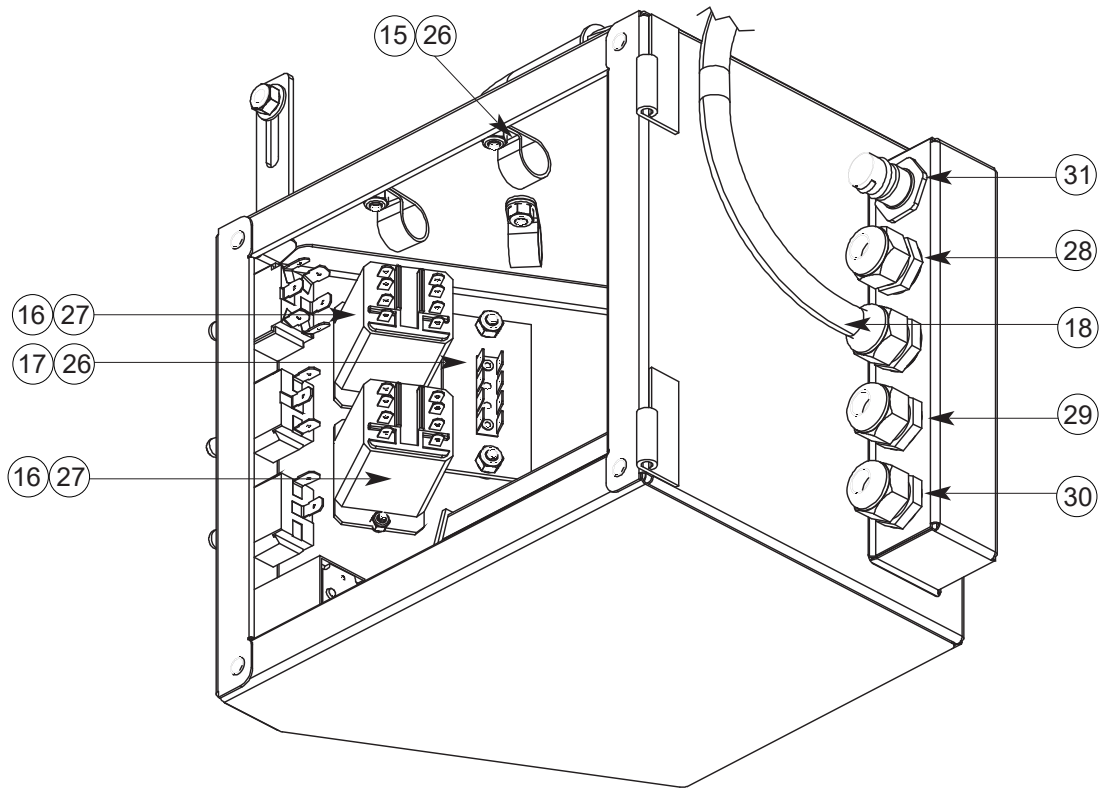
PROBLEM	POSSIBLE CAUSE	REMEDY
Wash temperature not at required reading.	<ol style="list-style-type: none"> <li>1. Check that white/blue wires are connected.</li> <li>2. Defective thermometer.</li> <li>3. Defective thermostat.</li> <li>4. Sustaining heater defective.</li> <li>5. Defective heater contactor (R2).</li> <li>6. Incoming inlet water temperature below required minimum.</li> <li>7. Defective heater delay relay (R4)</li> </ol>	<ol style="list-style-type: none"> <li>1. See Initial Start-up section.</li> <li>2. Replace.</li> <li>3. Adjust or replace thermostat.</li> <li>4. Replace heater element.</li> <li>5. Replace.</li> <li>6. Adjust.</li> <li>7. Replace.</li> </ol>
Rinse water not at required temperature range.	<ol style="list-style-type: none"> <li>1. Check that white/blue wires are connected.</li> <li>2. Defective thermometer.</li> <li>3. Defective thermostat.</li> <li>4. Incoming rinse water does not meet minimum criteria indicated on machine data plate</li> </ol>	<ol style="list-style-type: none"> <li>1. See Initial Start-up section.</li> <li>2. Replace.</li> <li>3. Adjust or replace thermostat.</li> <li>4. Adjust as required.</li> </ol>
No indication of pressure.	<ol style="list-style-type: none"> <li>1. Water turned off.</li> <li>2. Pressure gauge defective.</li> </ol>	<ol style="list-style-type: none"> <li>1. Turn water on.</li> <li>2. Replace pressure gauge.</li> </ol>



**NOTICE**

\*Machines with serial numbers before 21H396817 have the old CAM timer. See [previous manual](#).





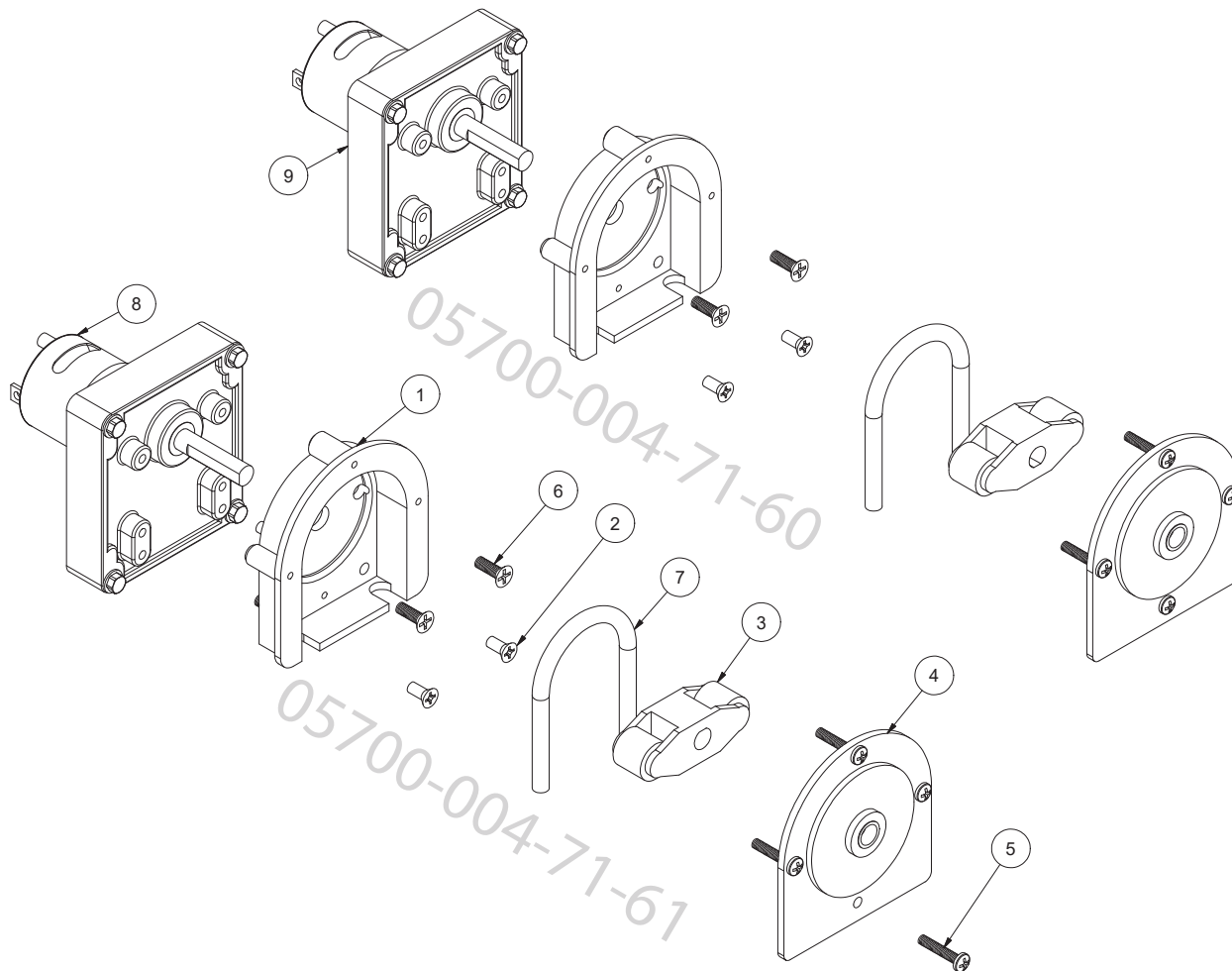
**NOTICE**

\*Machines with serial numbers before 21H396817 have the old CAM timer. See [previous manual](#).

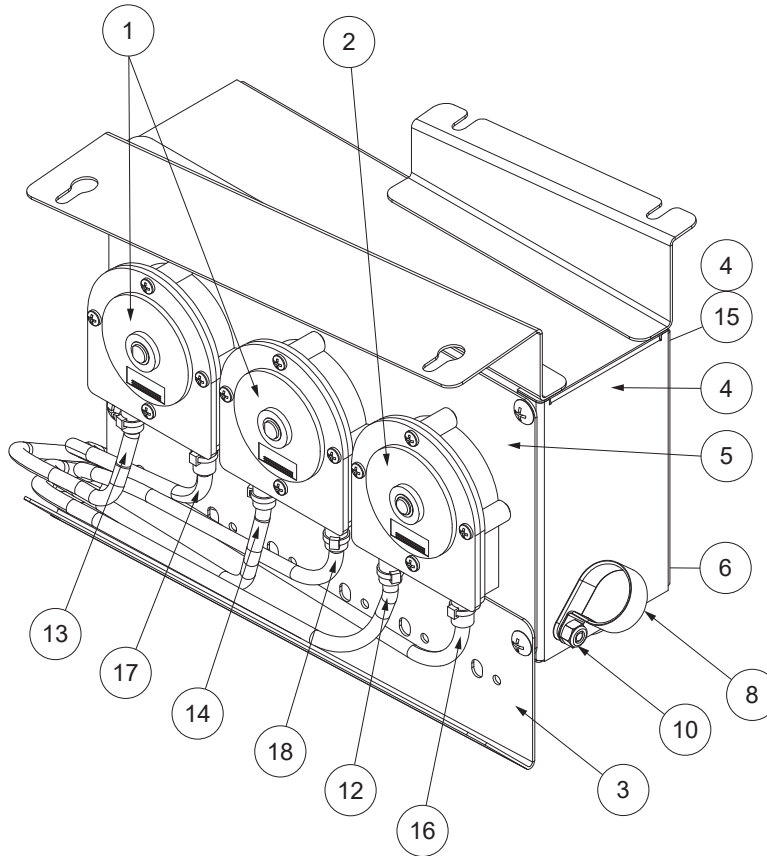
ITEM	QTY	DESCRIPTION	PART NUMBER
		Complete Control Box Assembly	05700-003-36-55
1	1	Control Box Weldment	05700-003-09-42
2	1	Control Box Cover	05700-003-30-54
3	1	Decal, Warning - Disconnect Power	09905-004-08-16
4	4	Screw, 10-32 x 1/2" Long, Phillips Tusshead	05305-011-39-36
5	1	Decal, Peri-pump Prime	09905-003-32-56
6	1	Switch, Delime/Normal	05930-301-21-18
7	1	Detergent/Rinse-aid Pump Prime Switch	05930-011-35-27
8	1	Sanitizer Pump Prime Switch	05930-111-38-21
9	1	Locknut, 1/4-20 SS Hex with Nylon Insert	05310-374-01-00
10	1	Washer, 1/4-20 SS	05311-174-01-00
11	2	Contactor	05945-109-05-69
12*	1	Timer, Electronic Cycle	05700-004-88-53
13	4	Fitting, Conduit, Heyco 1/2"	05975-011-49-03
14	1	Fitting, 1/2" Straight Snap-in	05975-003-33-27
15	5	Clamp, 5/8" Nylon	04730-011-39-01
16	2	Relay, 2-Pole	05945-111-35-19
17	1	Terminal Board	05940-021-94-85
18	1	Harness, Switch Panel	05700-003-35-37
19	1	Fitting, 1/2" 90-Degree Snap-in	05975-003-33-28
20	1	Conduit, 1/2" x 40"	05700-003-35-48
21	1	Cycle Counter	05990-111-35-38
22	2	Screw, 4-40 x 1/4" Phillips Pan Head	05305-002-32-38
23	1	Terminal Board	05940-002-78-97
24	1	Terminal Board	05940-001-97-91
25	1	Decal, Terminal Board 8-Position	09905-003-09-30
26	16	Locknut, 10-24 SS Hex with Nylon Insert	05310-373-01-00
27	6	Locknut, 6-32 SS Hex with Nylon Insert	05310-373-03-00
28	1	Harness, Wash Pump	05700-003-35-34
29	1	Harness, Drain Solenoid	05700-003-35-36
30	1	Harness, Peri-pump	05700-003-35-35
31	1	Conduit, 1/2" x 17" (not shown)	05700-003-35-49
32	1	Bracket, Timer	05700-004-88-57

**NOTICE**

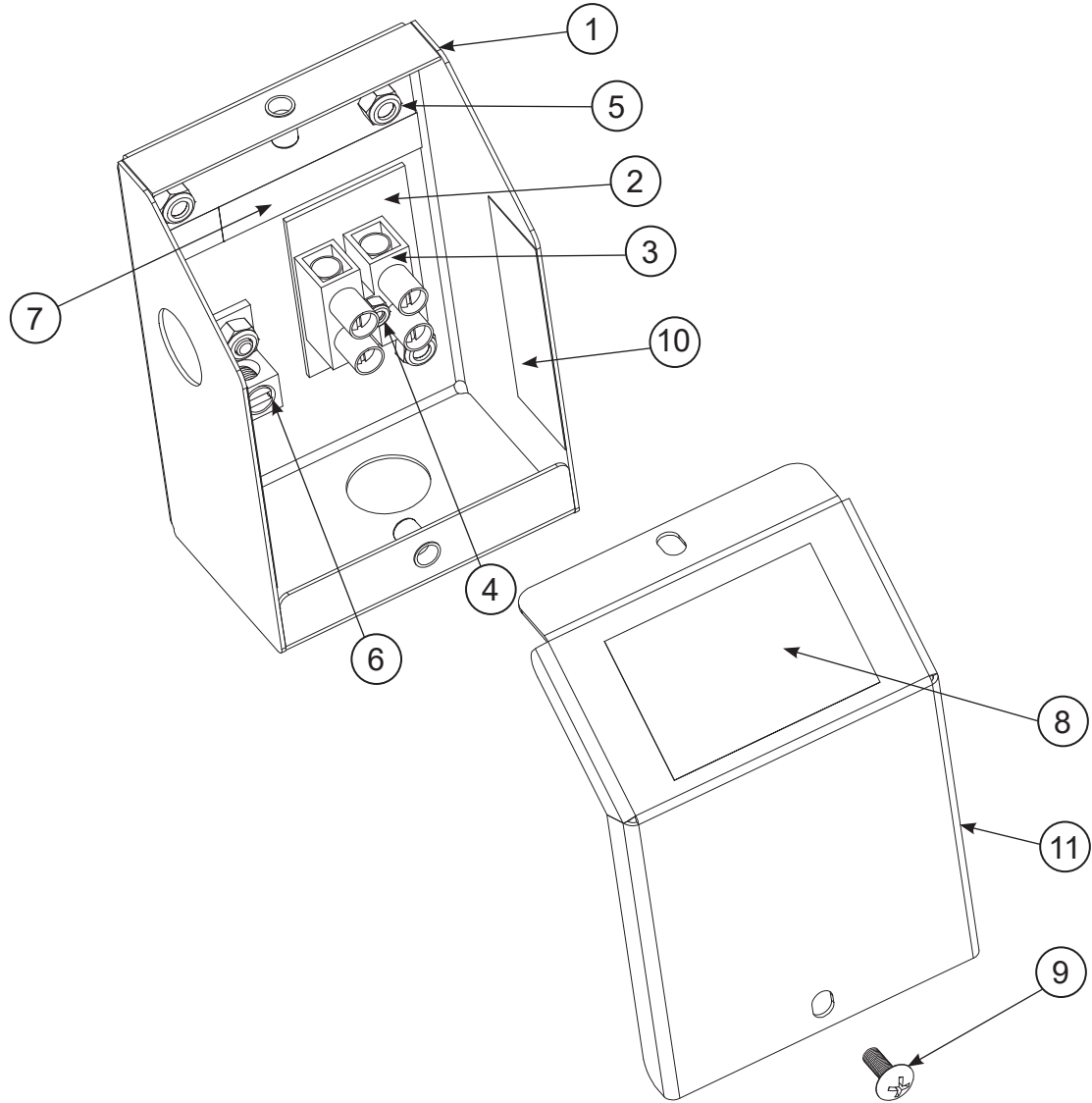
*\*Machines with serial numbers before 21H396817 have the old CAM timer. See [previous manual](#).*



ITEM	QTY	DESCRIPTION	PART NUMBER
1	2	Pump Housing	04320-111-37-09
2	4	Screw, 8-32 x 3/8" Phillips	05305-011-37-07
3	1	Roller, Plastic	04320-002-82-28
4	2	Pump Cover	04320-111-37-08
5	8	Screw, 6-32 x 3/4" Phillips	05305-011-37-05
6	4	Screw, 8-32 x 1/2" Phillips	05305-011-37-06
7	1	Tube, Squeeze, 8"	05700-003-22-89
8	1	Motor, 14 RPM	04320-111-35-13
9	1	Motor, 36 RPM	04320-111-35-14

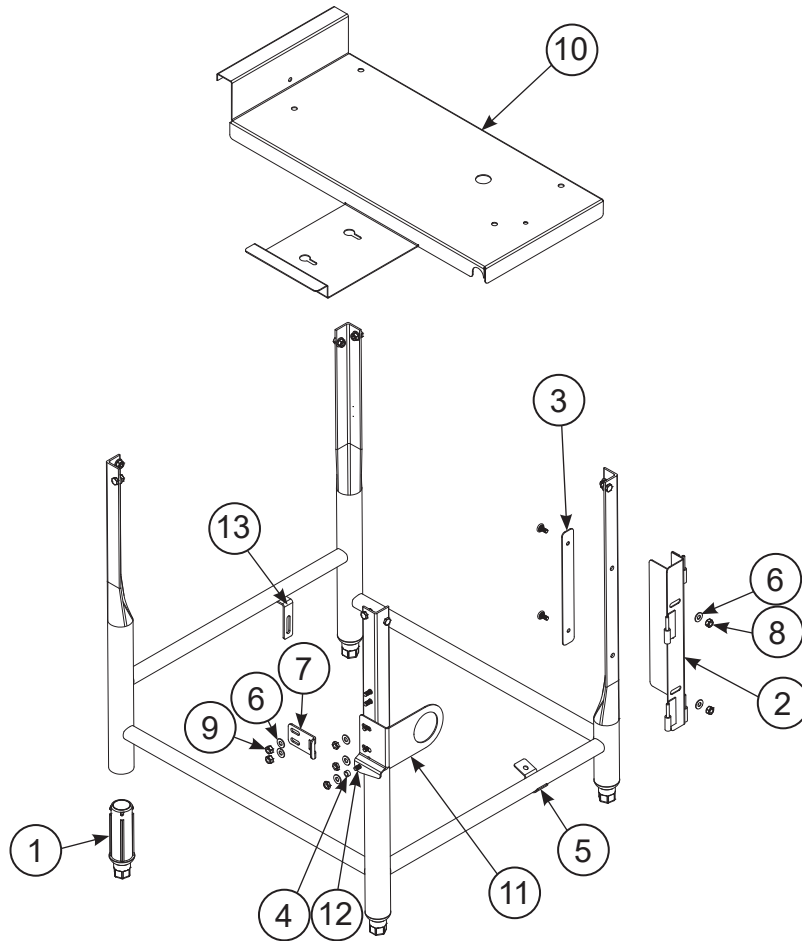


ITEM	QTY	DESCRIPTION	PART NUMBER
1	2	Peri-pump Assembly, 36 RPM	05700-004-71-60
2	1	Peri-pump Assembly, 14 RPM	05700-004-71-61
3	1	Drip Channel	05700-003-32-89
4	1	Peri-pump Box	05700-003-32-00
5	1	Peri-pump Box Cover	05700-003-33-80
6	1	Fitting, Conduit, Heyco 1/2" (behind box)	05975-011-65-51
7	1	Clamp, 5/8" Nylon (inside box)	04730-011-39-01
8	1	Clamp, 1" Nylon	04730-002-41-88
9	5	Screw, 10-32 x 1/2"	05305-011-39-36
10	3	Locknut, 10-24 SS Hex w/Nylon Insert	05310-373-01-00
11	3	Tube Stiffener (not shown)	05700-002-66-49
12	1	Tubing, 1/4" OD x 60" Long, Blue	05700-002-52-34
13	1	Tubing, 1/4" OD x 60" Long, White	05700-002-52-33
14	1	Tubing, 1/4" OD x 60" Long, Red	05700-011-63-18
15	1	Terminal Board (inside box)	05940-001-97-91
16	1	Tubing, 1/4" OD x 120" Long, Blue	05700-011-37-17
17	1	Tubing, 1/4" OD x 120" Long, White	05700-011-37-13
18	1	Tubing, 1/4" OD x 120" Long, Red	05700-011-37-15

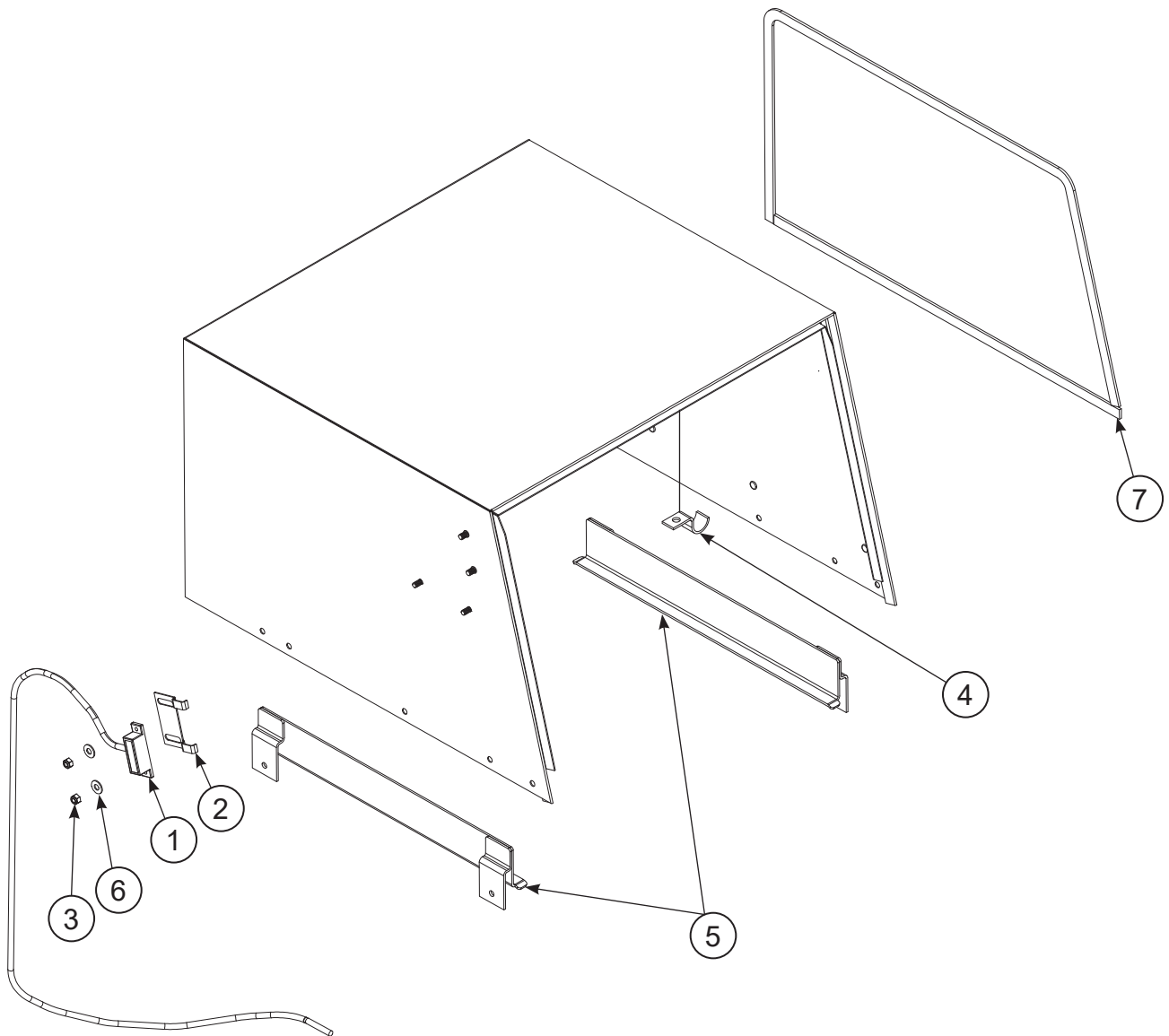


ITEM	QTY	DESCRIPTION	PART NUMBER
1	1	Box, Power Junction Weldment	05700-003-30-58
2	1	Terminal Block Spacer	05700-011-40-05
3	1	Terminal Block	05940-500-09-61
4	1	Locknut, 6-32 with Nylon Insert	05310-373-03-00
5	5	Locknut, 10-24 with Nylon Insert	05310-373-01-00
6	1	Lug, Ground	05940-200-76-00
7	1	Decal, Power Connection	09905-011-47-64
8	1	Decal, Warning to Disconnect Power	09905-004-08-16
9	1	Screw, 10-32 x 1/2" Long, Phillips Trushead	05305-011-39-36
10	2	Decal, Copper Conductors Only	09905-011-47-35
11	1	Cover, Solenoid Box	05700-003-46-72

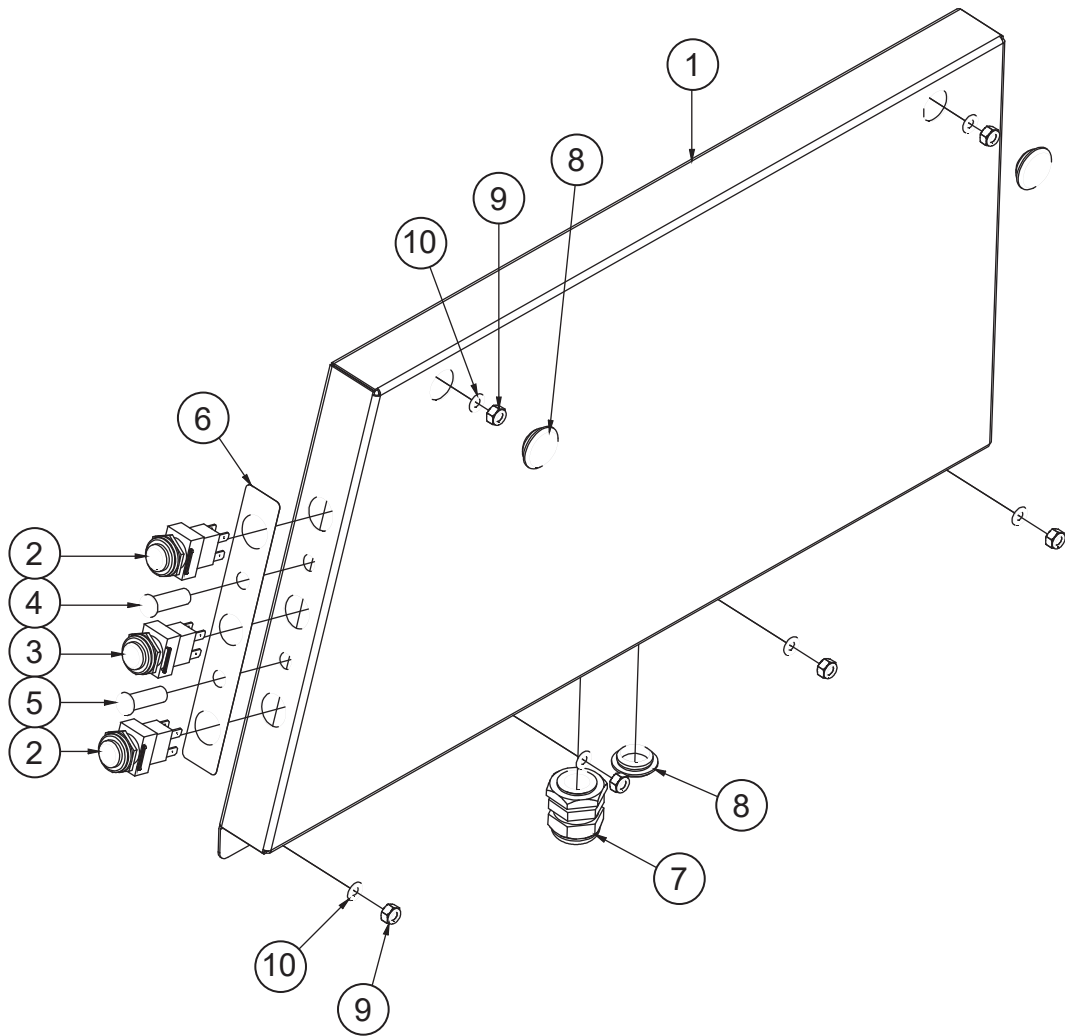




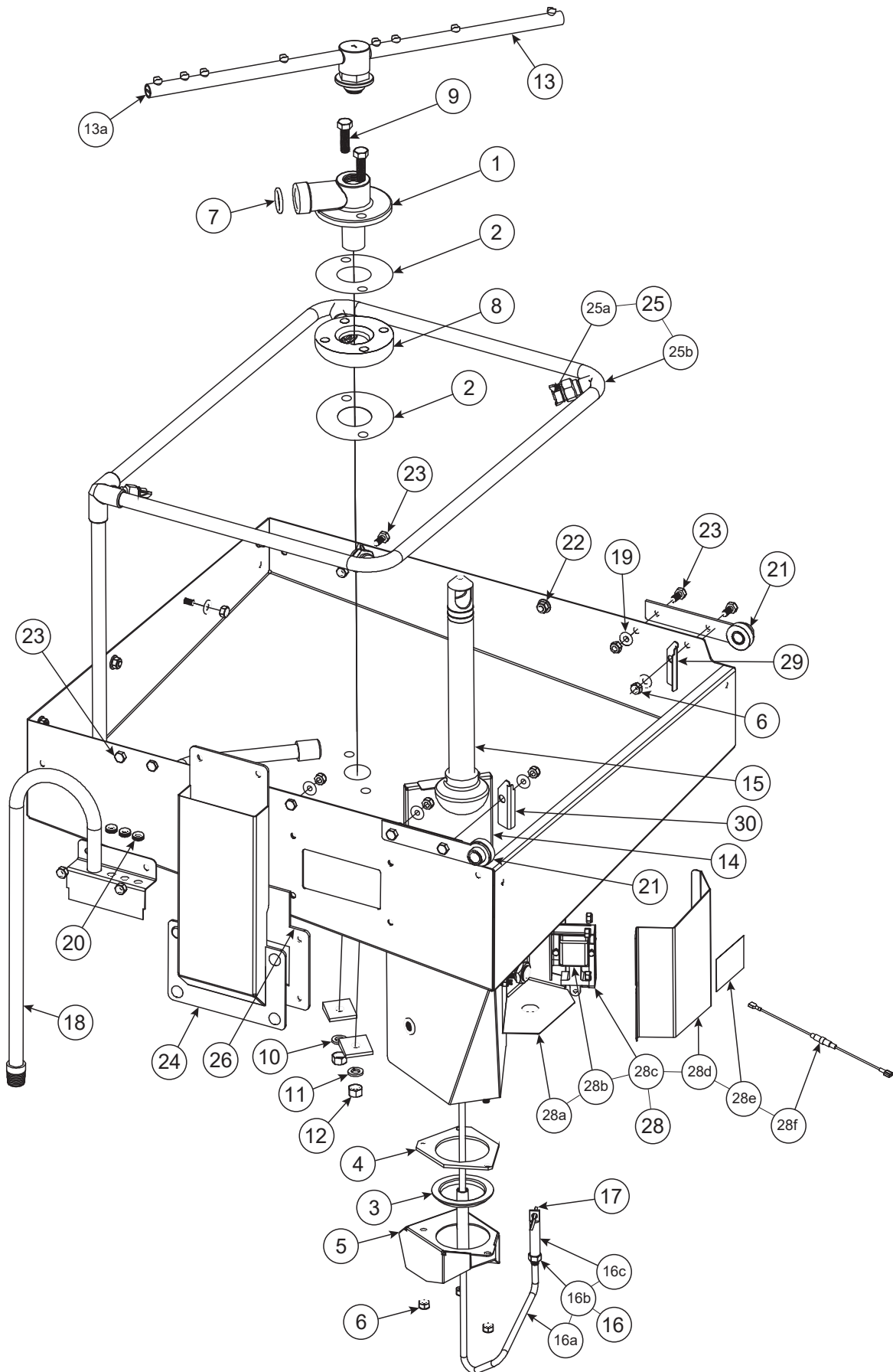
ITEM	QTY	DESCRIPTION	PART NUMBER
1	4	Adjustable Foot	05340-002-14-55
2	1	Plate, Hinge Weldment	05700-003-10-11
3	1	Washer, Hinge Weldment	05700-002-54-62
4	1	Spacer, PB Bolt	05700-000-29-40
5	1	Clamp, Pipe	05700-000-35-05
6	8	Washer, 1/4-20 SS	05311-174-01-00
7	1	Keeper, Door Panel Latch	05700-003-09-31
8	4	Locknut, 1/4-20 SS Hex with Nylon Insert	05310-374-01-00
9	5	Nut, Hex 1/4-20	05310-274-01-00
10	1	Heater Mounting Plate Weldment	05700-002-51-93
11	1	Bracket, Temperature Gauge	05700-003-14-53
12	1	Bolt, 1/4-20 x 1/2"	05305-274-02-00
13	1	Bracket, Manifold Position Tube	05700-011-34-63



ITEM	QTY	DESCRIPTION	PART NUMBER
1	1	Switch, 115 V Reed	05930-002-36-80
2	1	Bracket, Limit Switch	05700-021-71-18
3	4	Locknut, 10-24 with Nylon Insert	05310-373-01-00
4	2	Clamp, Pipe 5/8"	05700-000-35-06
5	2	Rack Rail Weldment	05700-002-45-67
6	2	Washer, 1/4"-20 I.D.	05311-174-01-00
7	1	Gasket, Switch Panel	05330-100-10-00

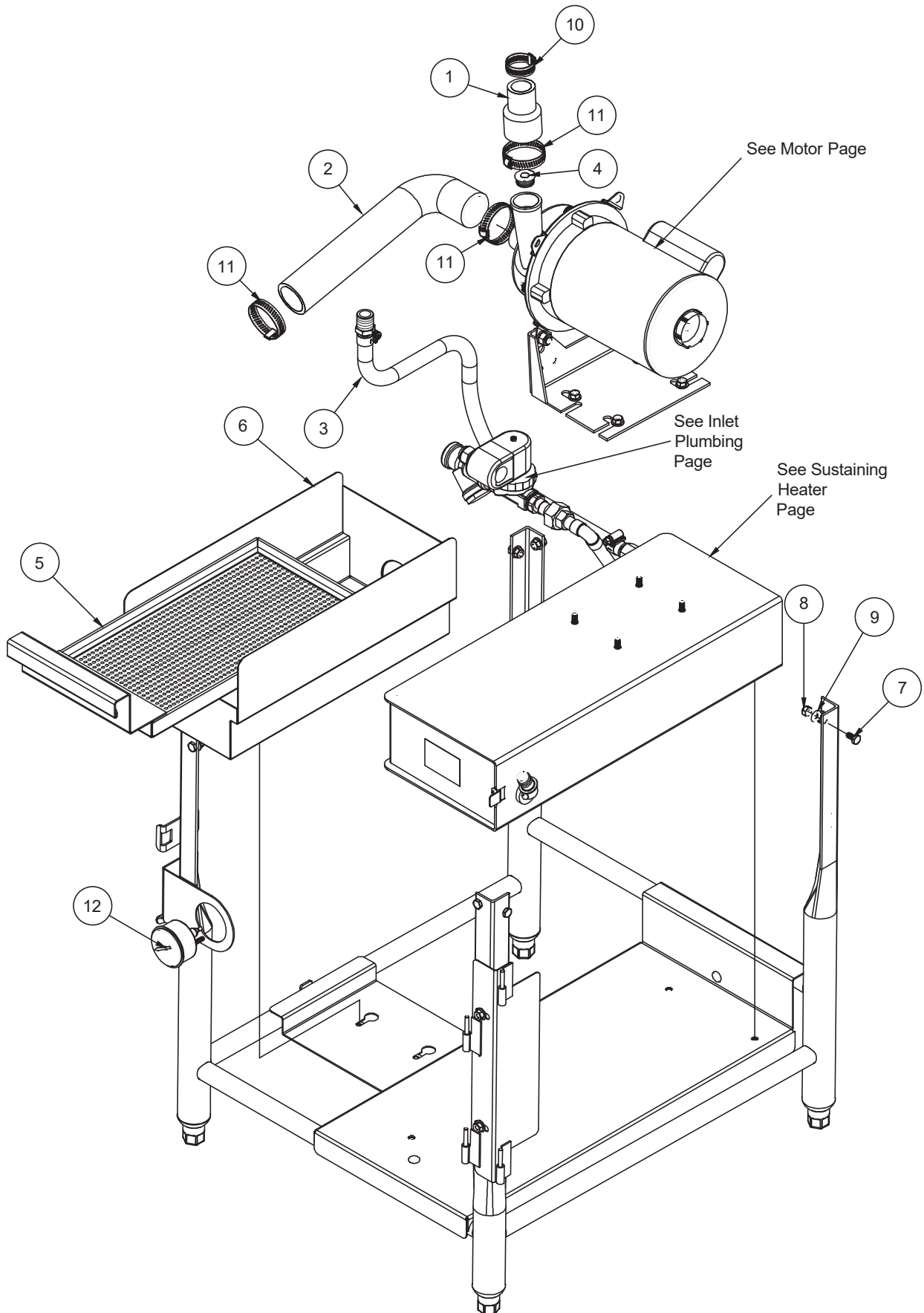


ITEM	QTY	DESCRIPTION	PART NUMBER
		Complete Switch Panel Assembly	05700-003-24-38
1	1	Switch Panel Weldment	05700-003-24-36
2	2	Switch, Prime Assembly	05700-003-14-91
3	1	Switch, On/Off Assembly	05700-003-14-92
4	1	Light, Amber	05945-504-06-18
5	1	Light, Red	05945-504-07-18
6	1	Decal, Switch Panel	09905-003-08-63
7	1	Fitting, .25-.546	05975-011-65-51
8	3	Plug, 3/4" Hole	04730-011-60-21
9	6	Locknut, 10-24 with Nylon Insert	05310-373-01-00
10	6	Washer	05311-176-02-00
11	1	Terminal Board (not shown)	05940-001-97-91



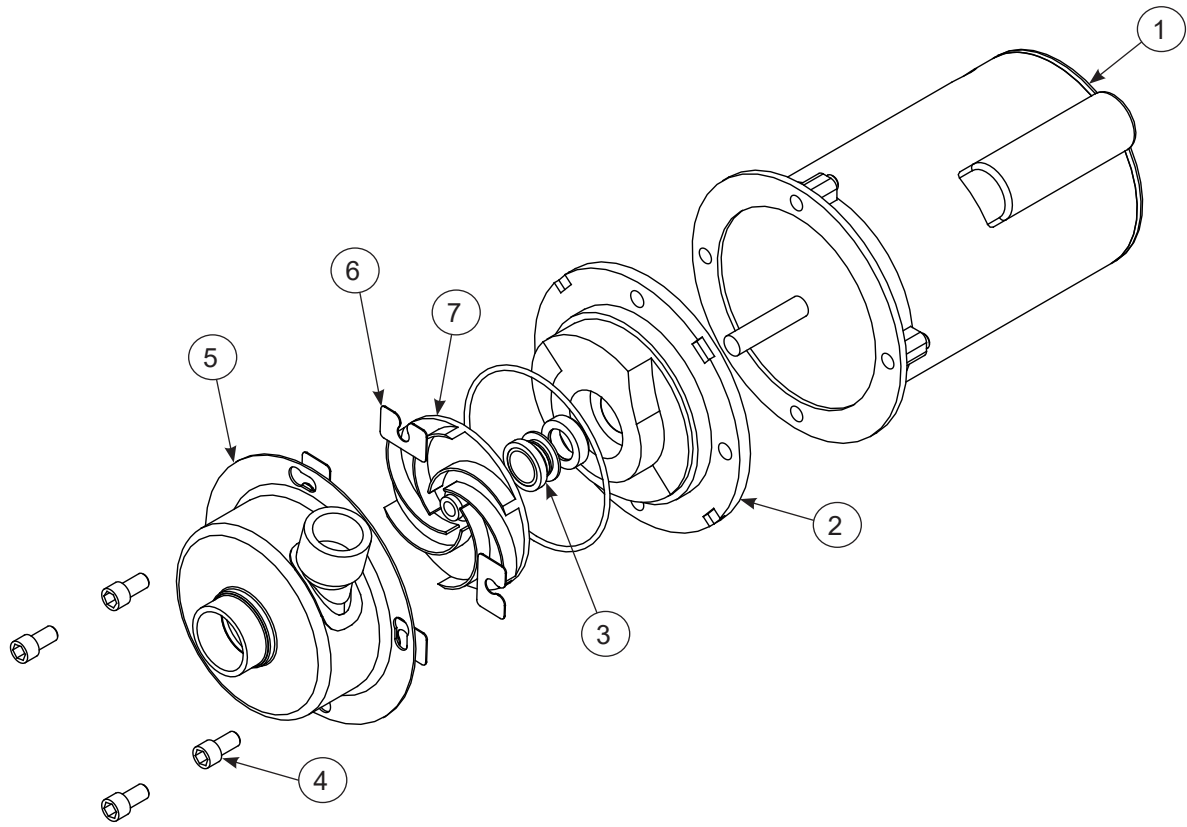
ITEM	QTY	DESCRIPTION	PART NUMBER
1	1	Lower Manifold Weldment	05700-002-45-51
2	2	Manifold Gasket	05700-111-35-03
3	1	Drain Seat Insert	05700-004-37-18
4	1	Spillway Gasket	05700-111-34-52
5	1	Spillway Weldment	05700-003-52-13
6	23	Locknut, 1/4-20 SS Hex with Nylon Insert	05310-374-01-00
7	1	Manifold O-Ring	05330-111-35-15
8	1	Modified Casting Wedge	09515-011-46-61
9	2	Bolt, 3/8-16 x 1 1/4" SS	05305-276-10-00
10	2	Washer, 3/8" Bevel-Square Iron	05311-011-35-36
11	2	Lockwasher, 3/8"	05311-276-01-00
12	2	Nut, 3/8-16 SS Hex	05310-276-01-00
13	1	Complete Wash Arm Assembly	05700-021-39-23
13a	1	Wash Arm End-cap	05700-003-31-59
14	1	Sump Strainer	05700-002-60-50
15	1	Stand Pipe	05700-004-19-51
16	1	Complete Drain Link Assembly	05700-002-45-52
16a	1	Drain Link	05700-002-40-83
16b	1	Nut, Hex, 5/16-18	05310-275-01-00
16c	1	Drain Link Connector	05700-002-38-10
17	1	Hair Pin, 1/8" to 1"	05315-011-60-09
18	1	Fill Tube Weldment	05700-002-45-61
19	18	Washer, 1/4-20 ID	05311-174-01-00
20	3	Chemical Tube Grommet	05325-002-42-65
21	2	Complete Door Pivot Plate Assembly	05700-003-54-46
22	3	Bolt, 1/4-20 x 1/2"	05305-274-02-00
23	6	Screw, 1/4-20 x 5/8"	05305-274-24-00
24	1	Air-gap Weldment	05700-003-23-48
25	1	Halo Assembly	05700-003-23-49
25a	1	Halo Weldment	05700-003-16-64
25b	4	Spray Nozzle and Receptacle	04730-002-55-61
26	1	Gasket, Air-gap	05330-003-24-17

ITEM	QTY	DESCRIPTION	PART NUMBER
27	2	Clamp, 1" Nylon (not shown, located on tub bottom)	04730-002-41-88
28	1	Drain Solenoid Box Assembly	05700-003-09-61
28a	1	Solenoid Box Weldment	05700-003-35-88
28b	1	Drain Solenoid, 115 V	04810-200-11-00
28c	4	Locknut, 10-24 with Nylon Insert	05310-373-01-00
28d	1	Solenoid Box Cover	05700-003-30-25
28e	1	Decal, Warning to Disconnect Power	09905-004-08-16
28f	1	Fuse Holder Assembly, In-line	05920-004-55-23
		Fuse, In-line 1 A (not shown)	05920-004-55-14
29	1	Splash Shield, Right	05700-005-03-84
30	1	Splash Shield, Left	05700-005-03-85

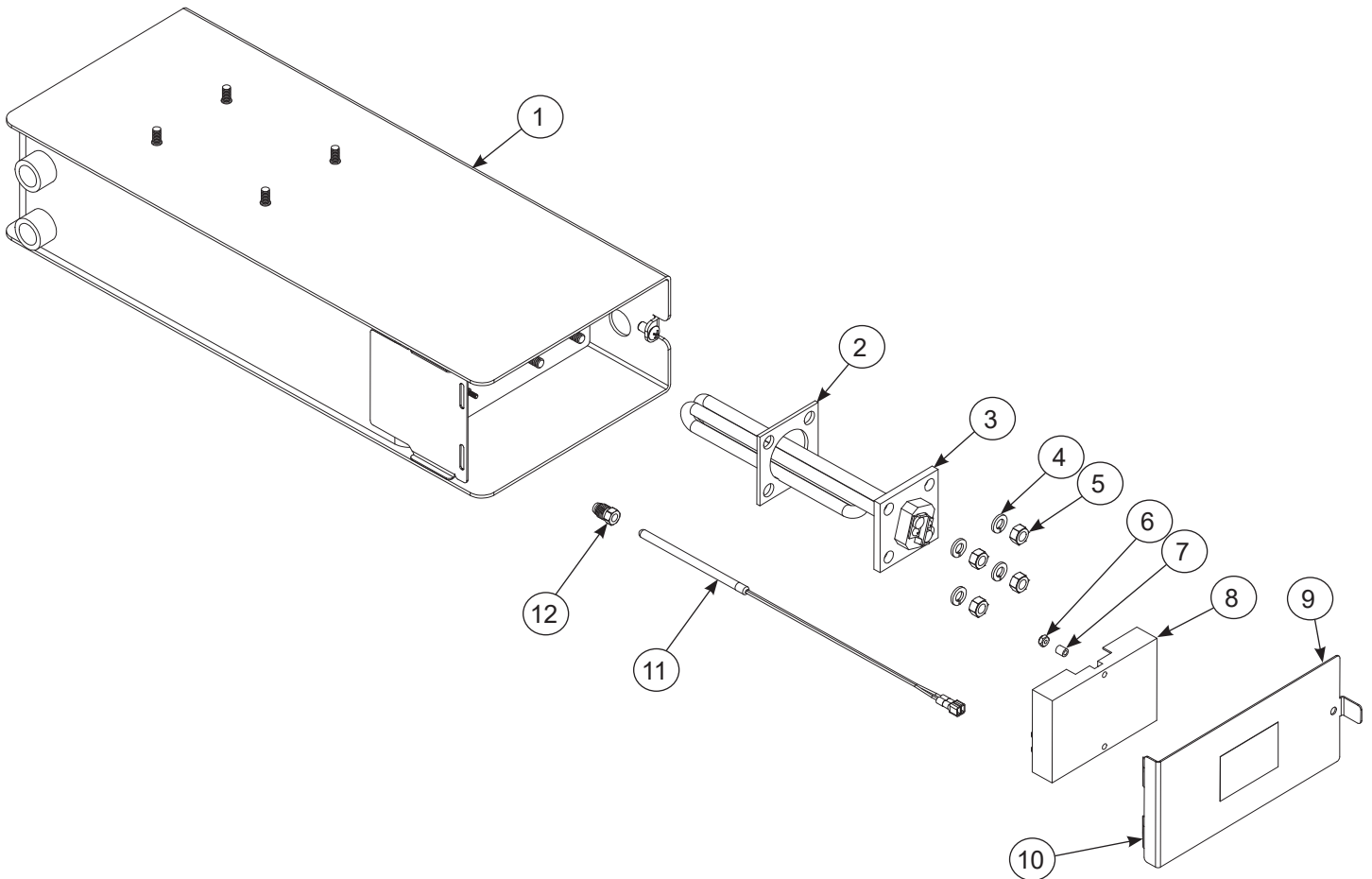


ITEM	QTY	DESCRIPTION	PART NUMBER
1	1	Discharge Tube Connector	05700-011-70-34
2	1	Pump Suction Hose	05700-002-40-82
3	1	Discharge Hose Assembly	05700-002-45-58
4	1	Wash Restrictor	05700-002-84-69
5	1	Accumulator Strainer Weldment	05700-003-33-25
6	1	Accumulator Weldment	05700-002-51-95
7	8	Bolt, 1/4-20 x 1/2"	05305-274-02-00
8	18	Locknut, 1/4-20 SS Hex with Nylon Insert	05310-374-01-00
9	18	Washer, 1/4-20 SS	05311-174-01-00
10	1	Hose Clamp, 13/16" to 1 1/2"	04730-719-06-09
11	3	Hose Clamp, 1 1/16" to 2 1/4"	04730-719-18-00
12	1	Gauge, Thermometer	06685-111-68-48

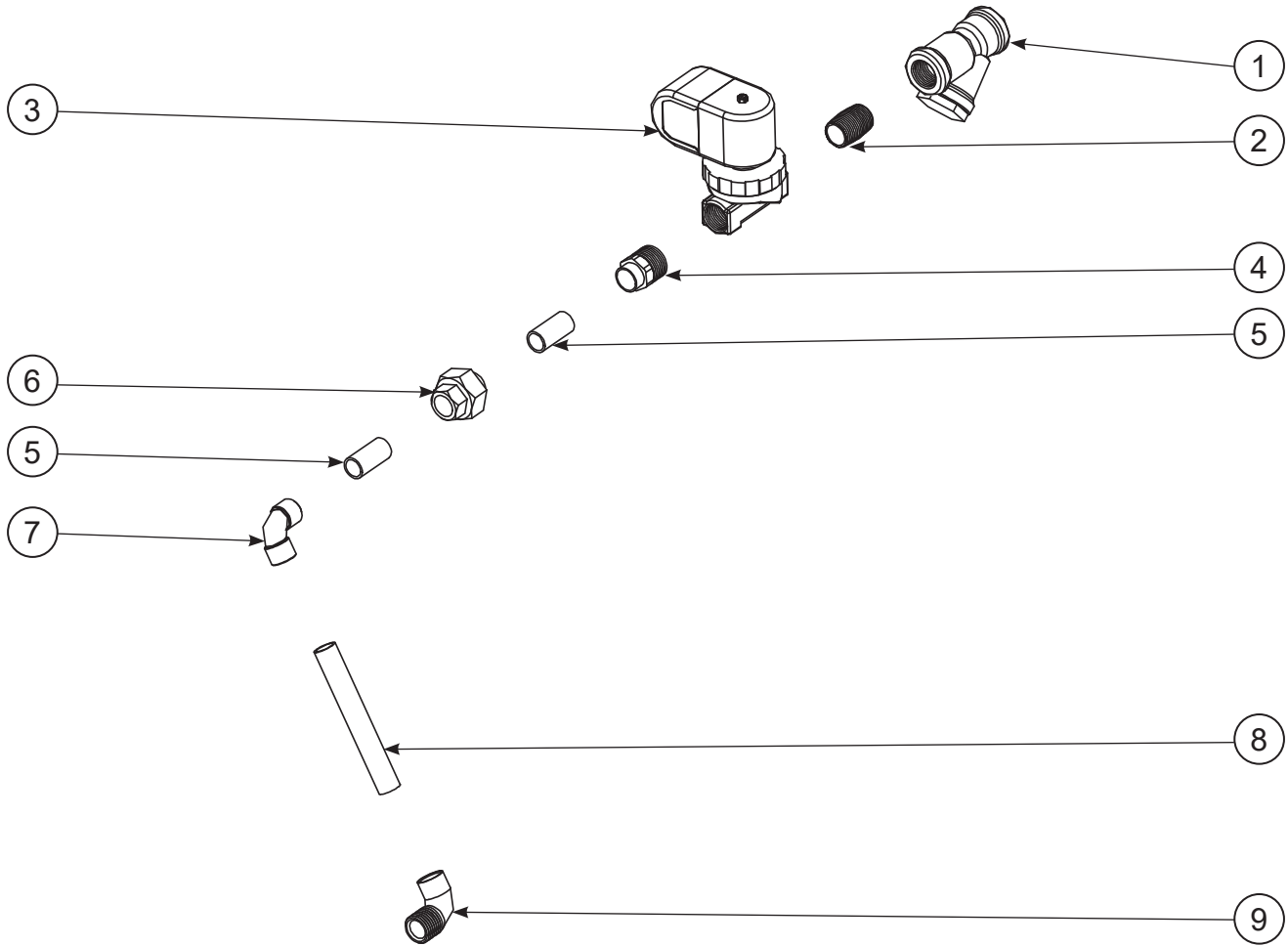




ITEM	QTY	DESCRIPTION	PART NUMBER
		Complete Pump & Motor Assembly	06105-004-28-95
1	1	Motor Only	06105-004-32-03
2	1	Case O-Ring Seal Plate	05330-002-81-83 05700-002-81-87
3	1	Mechanical Seal	05330-002-34-22
4	4	Case Capscrew	05305-002-81-88
5	1	Pump Casing	05700-002-85-01
6	1	Shim Kit	05700-002-82-58
7	1	Impeller Assembly	05700-002-81-86
8	1	Drain Plug (not shown)	04730-002-81-89

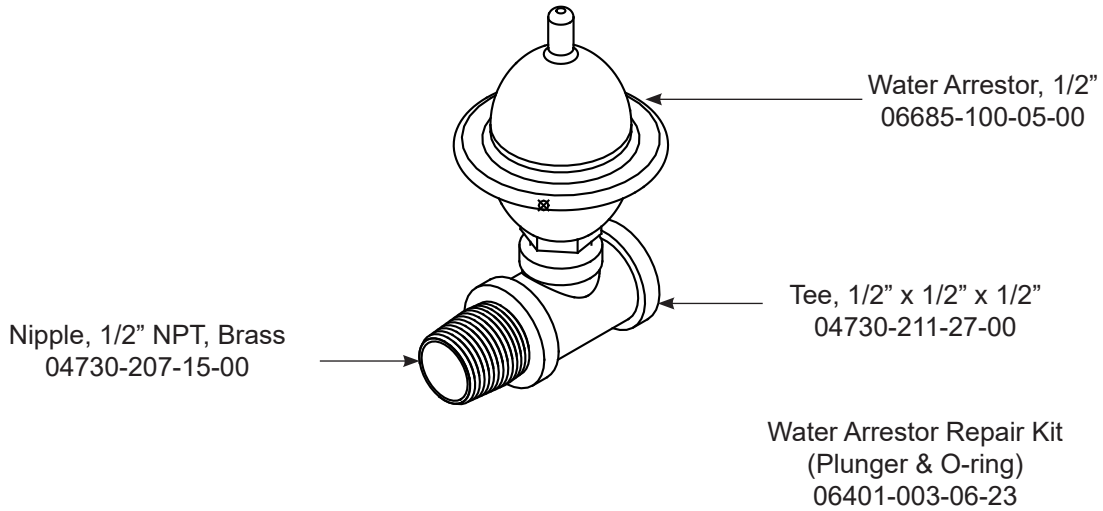


ITEM	QTY	DESCRIPTION	PART NUMBER
1	1	Heater Tank	05700-003-25-40
2	1	Heater Gasket	05330-011-61-34
3	1	Sustaining Heater	04540-002-45-13
4	4	Lockwasher, Split 5/16"	05311-275-01-00
5	4	Nut, Hex 5/16-18	05310-275-01-00
6	2	Nut, Lock 6-32 Hex with Nylon Insert	05310-373-03-00
7	2	Spacer, 1/4" OD x 9/32"	09330-004-34-91
8	1	Thermostat, Elan Electric (Dual)	06685-004-17-27
9	1	Cover, Heater Box	05700-004-34-90
10	1	Decal, Warning to Disconnect Power	09905-004-08-16
11	1	Probe, Thermistor	06685-004-17-26
12	1	Probe Fitting, Thermostat	05310-924-02-05

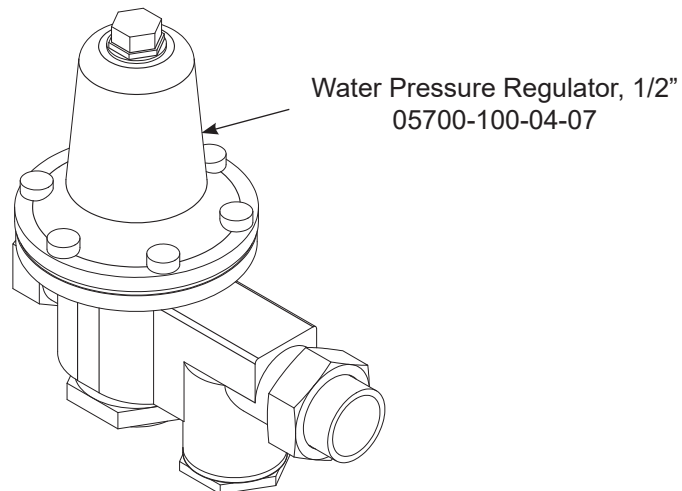


ITEM	QTY	DESCRIPTION	PART NUMBER
1	1	Y-Strainer	04730-217-01-10
2	1	Nipple, Close, 1/2" NPT, Brass	04730-207-15-00
3	1	Valve, Solenoid, 1/2" NPT, 115 V	04810-100-12-18
4	1	Adaptor, 1/2" Fitting (CU to Male)	04730-401-03-01
5	2	Tube, Copper, 1/2" x 1 1/4"	05700-001-08-28
6	1	Union, 1/2"	04730-412-05-01
7	1	Elbow, 1/2"	04730-406-01-01
8	1	Tube, Copper, 1/2" x 4 1/4"	05700-001-01-60
9	1	Elbow, 90-Degree (CU to MSPS)	04730-406-32-01

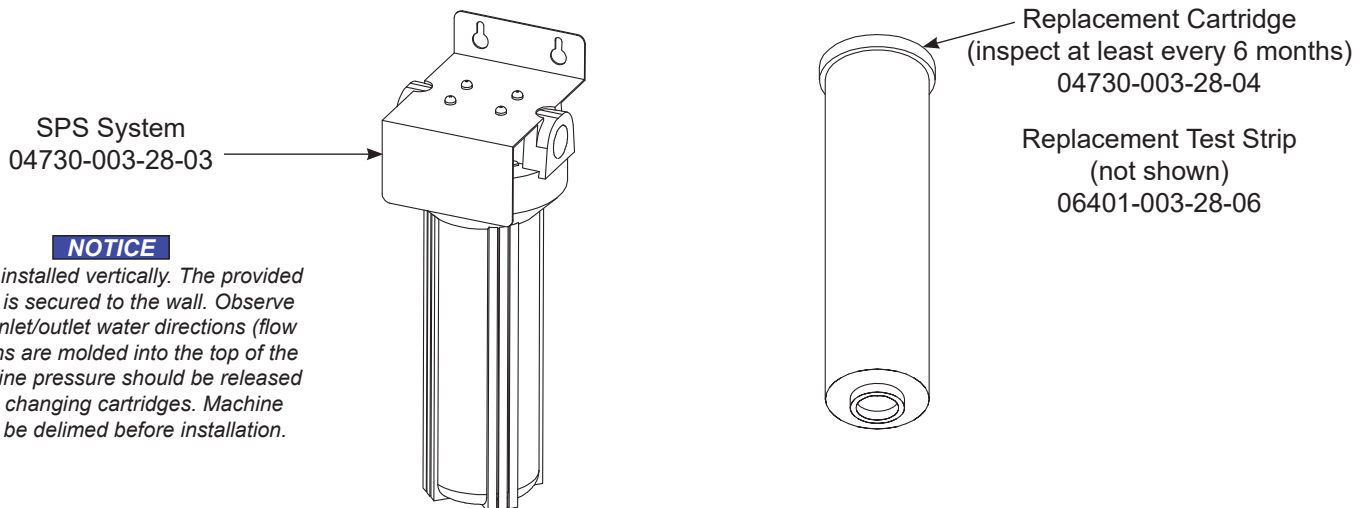
**SHOCK ABSORBER (WATER ARRESTOR) OPTION**



**PRESSURE REGULATOR OPTION**

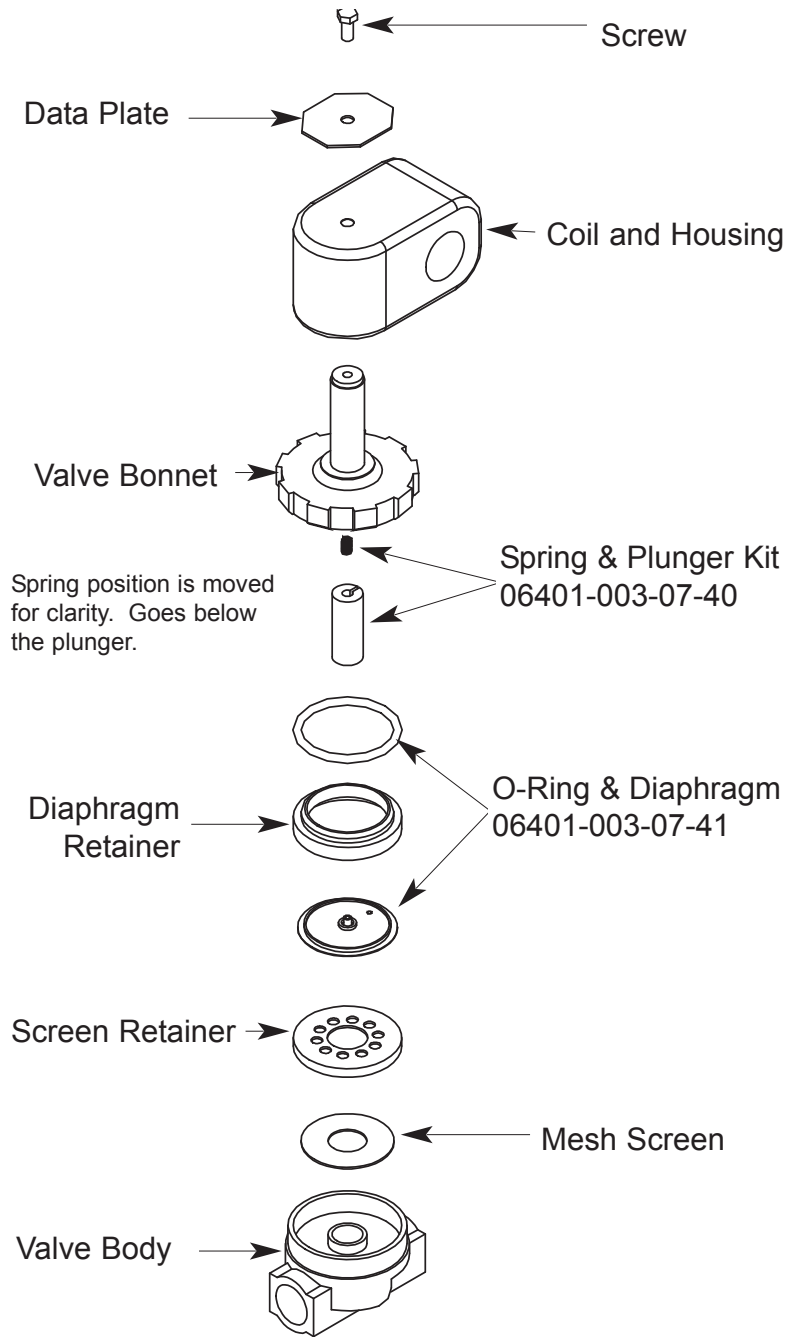


**SCALE PREVENTION SYSTEM (SPS) OPTION**



**NOTICE**

*Must be installed vertically. The provided bracket is secured to the wall. Observe proper inlet/outlet water directions (flow directions are molded into the top of the head). Line pressure should be released before changing cartridges. Machine should be delimed before installation.*



**Complete 110 Volt Solenoid Valve Assembly, 1/2"**

04810-100-12-18

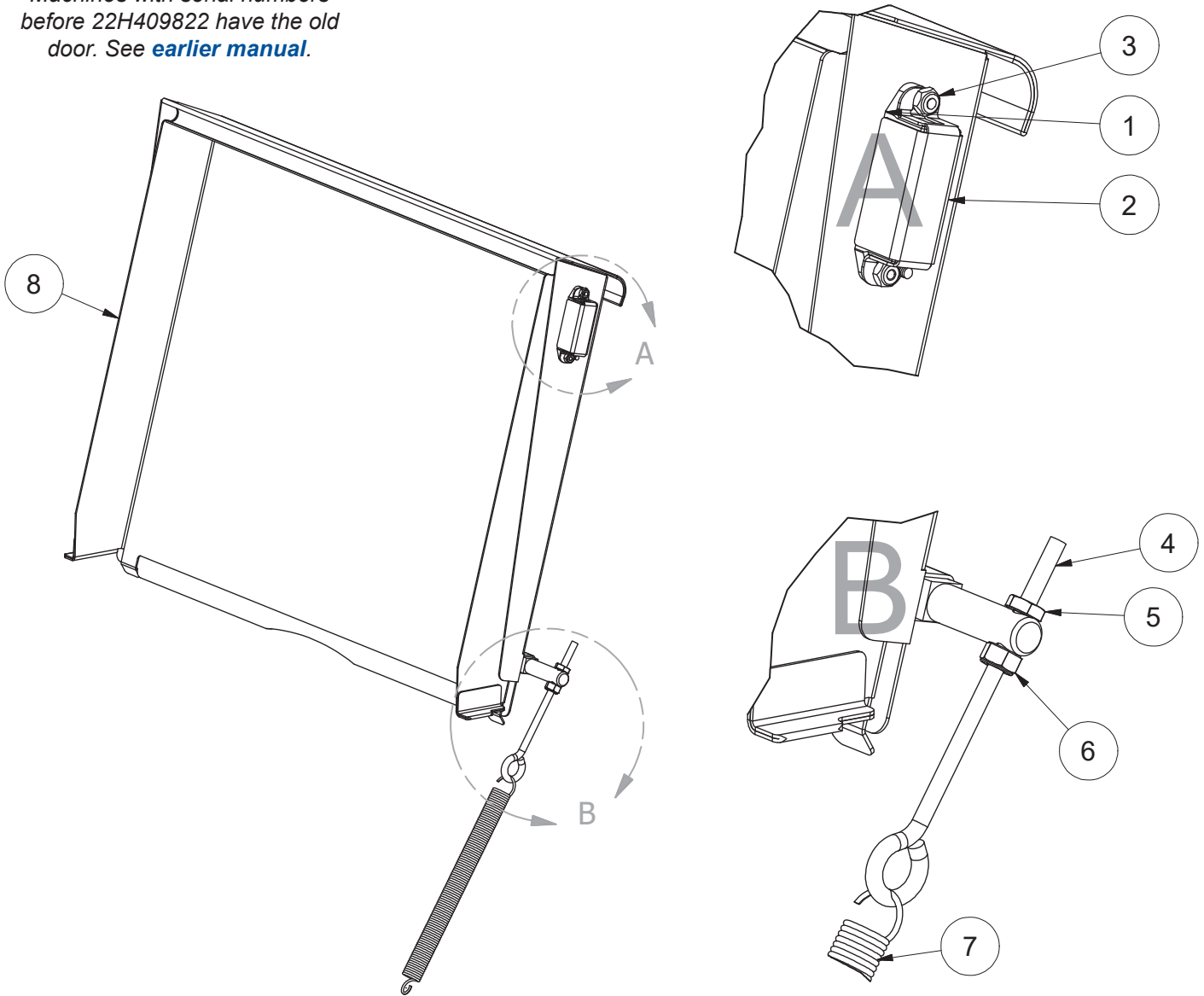
**Coil & Housing only, 1/2"**

06401-003-07-43

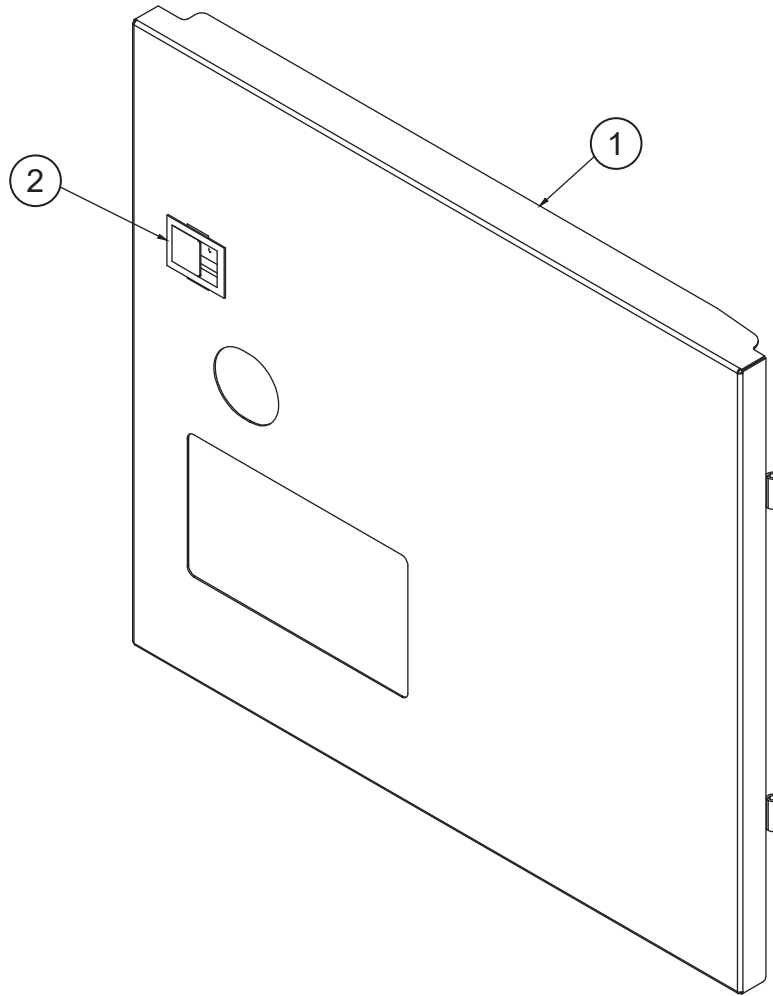
Complete Door Assembly  
05700-005-05-95

**NOTICE**

Machines with serial numbers before 22H409822 have the old door. See [earlier manual](#).



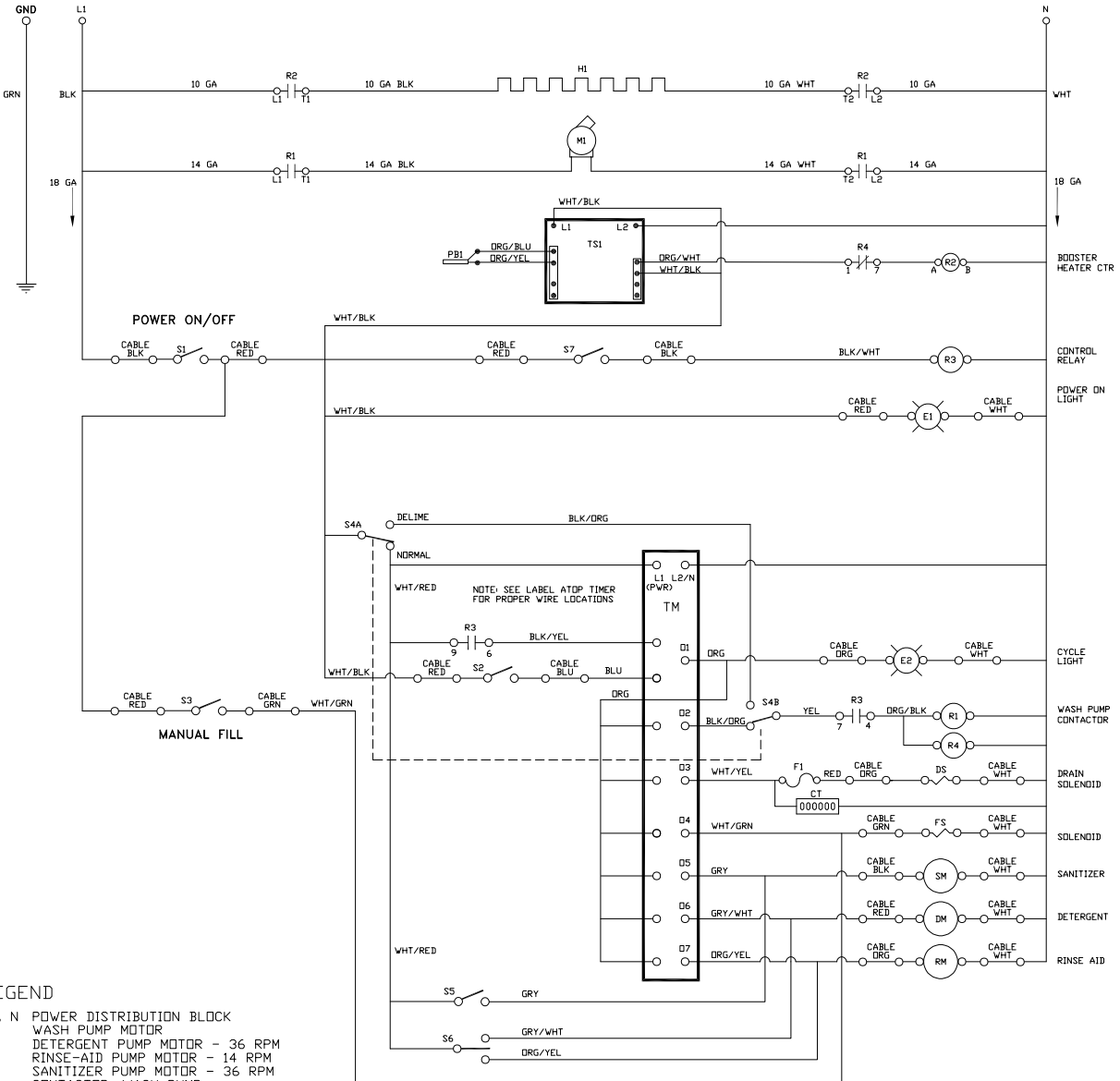
ITEM	QTY	DESCRIPTION	PART NUMBER
1	1	Magnet	05930-002-88-42
2	1	Magnet Cover	05700-004-07-38
3	2	Locknut, 6-32 SS Hex with Nylon Insert	05310-373-03-00
4	1	Bolt, 1/4-20 Eye	05306-002-55-59
5	1	Nut, Hex 1/4-20	05310-274-01-00
6	1	Locknut, 1/4-20 Hex with Nylon Insert	05310-374-01-00
7	1	Spring, Door	05340-011-44-58
8	1	Door	05700-005-05-96



ITEM	QTY	DESCRIPTION	PART NUMBER
		Complete Panel Assembly	05700-003-09-53
1	1	Panel Weldment	05700-003-09-54
2	1	Handle	05340-001-96-30

DG-E  
SCHEMATIC

120 VAC, 50/60 Hz, 1-PHASE



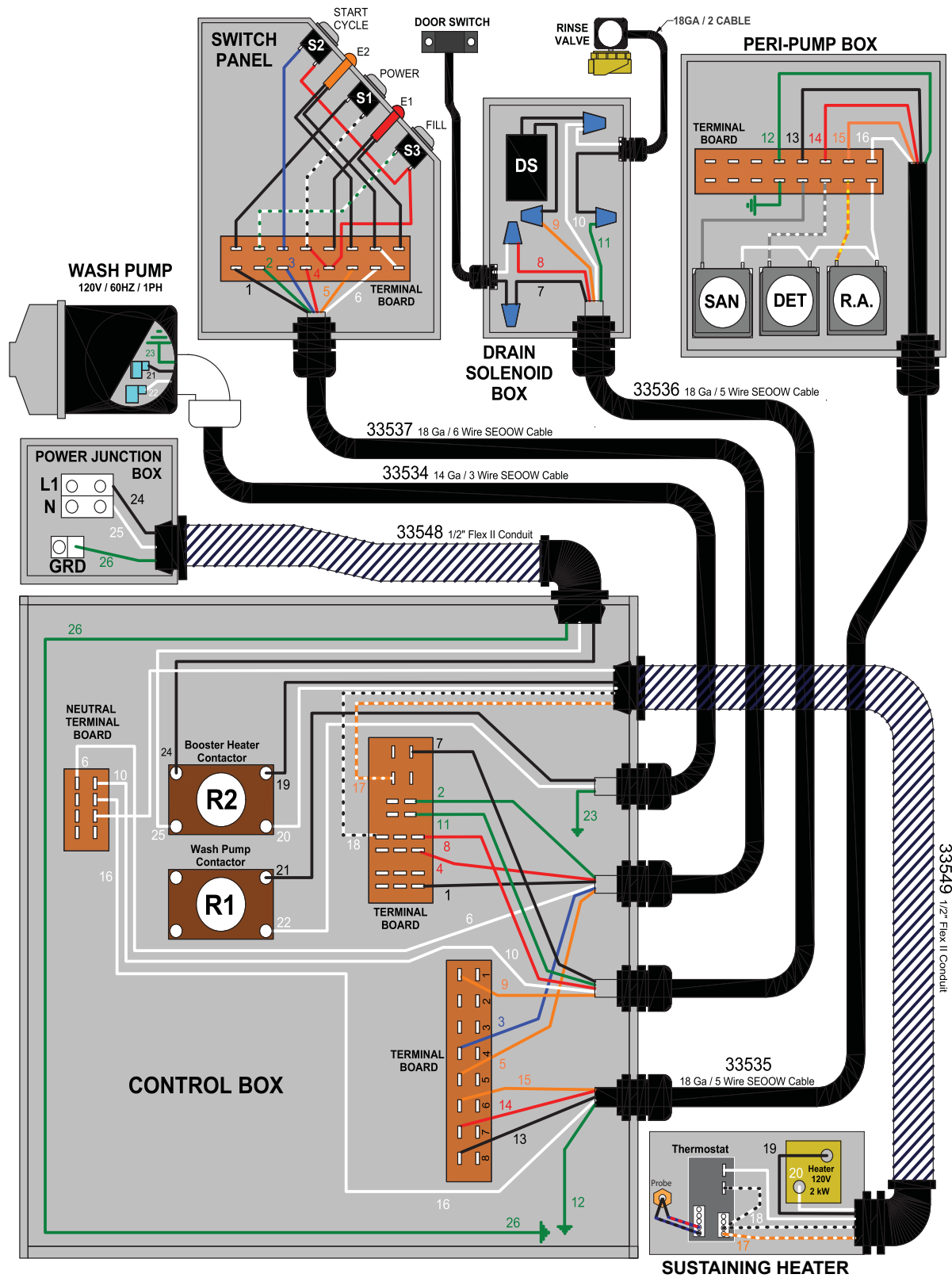
LEGEND

- L1, N POWER DISTRIBUTION BLOCK
- M1 WASH PUMP MOTOR
- DM DETERGENT PUMP MOTOR - 36 RPM
- RM RINSE-AID PUMP MOTOR - 14 RPM
- SM SANITIZER PUMP MOTOR - 36 RPM
- R1 CONTACTOR, WASH PUMP
- R2 CONTACTOR, BOOSTER
- R3 RELAY, CONTROL
- R4 RELAY, HEATER DISABLE
- S1 SWITCH, OFF/ON
- S2 SWITCH, START
- S3 SWITCH, FILL
- S4 SWITCH, NORMAL/DELIME
- S5 SWITCH, SANITIZER PRIME
- S6 SWITCH, DETERGENT/RINSE PRIME
- S7 SWITCH, DOOR
- TS1 THERMOSTAT, BOOSTER HEATER
- PB1 PROBE, BOOSTER TEMPERATURE
- E1 LIGHT, POWER ON
- E2 LIGHT, CYCLE
- DS DRAIN SOLENOID
- F1 DRAIN SOLENOID FUSE 1AMP
- FS FILL SOLENOID
- TM TIMER (CYCLE)
- CT CYCLE COUNTER
- D1 OUTPUT, CYCLE LIGHT
- D2 OUTPUT, PUMP (WASH/RINSE)
- D3 OUTPUT, DRAIN
- D4 OUTPUT, FILL
- D5 OUTPUT, SANITIZER
- D6 OUTPUT, DETERGENT
- D7 OUTPUT, RINSE AID

CYCLE TIMING

STEP	WASH	DETER	DRAIN	FILL	RINSE AID	SANI	RINSE
START TIME	0.00	1.50	42.25	53.25	55.75	55.75	65.00
DURATION	46.00	5.00	9.00	11.00	4.25	5.00	25.00







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